The Electragist

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Vol. 27, No. 11 — Association of Electragists INTERNATIONAL — SEPTEMBER, 1928

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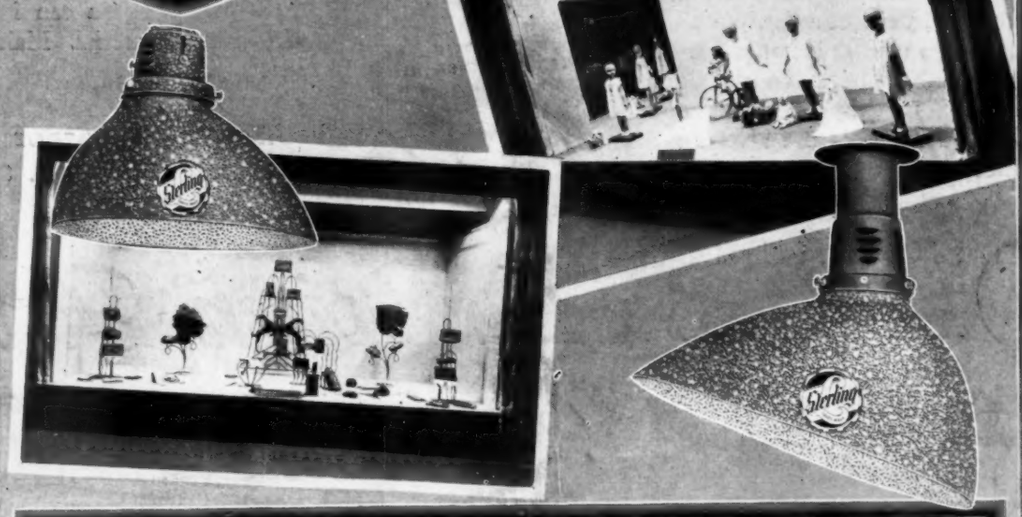

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The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the
Association of Electragists—International

Vol. 27 SEPTEMBER, 1928 No. 11

Cooperation the Keynote of Electragist Convention

Interesting Speakers, Lively Discussions of Industry Problems, Important Changes in A. E. I. Constitution, Feature Twenty-eighth Convention

THE largest convention group ever assembled under the banner of the Association of Electragists, International, was present at the Hotel Stevens, Chicago, August 6 when President Clyde L. Chamblin's gavel announced the commencement of the program. Well over 1,100 registered their presence.

Many of the speakers emphasized the value of cooperation among members of all branches of the electrical industry in order to establish a sound basis for service to the public and prosperity for the industry. Members of the motor specialists group, upon meeting with representatives of the motor manufacturers, found that each branch had the same desire to work out the problems for the benefit of all.

A. Penn Denton, speaking on trade relations, Clyde L. Chamblin in his presidential address, L. K. Comstock on the subject of "The New Cooperation", all emphasized the worthwhileness of working together. Distinguished leaders from all groups sat down together to listen to the speakers and talk things over, with the result that a better spirit of trust and confidence was evident before the convention closed.

The convention opened with the manufacturers' exhibition in the upper lobby and grand ball room of the Stevens Hotel, where forty-two manufacturers displayed their latest products for the attention of visiting electragists.

At noon on August 7, convention delegates met with members of the Electric Association of Chicago at the regular quarterly luncheon of that organization in the grand ball room of the Hotel Stevens. A. Penn Denton, of Kansas City, Mo., was the guest speaker, taking as his subject, "Our Trade Relations", an address which is published elsewhere in this issue of THE ELECTRAGIST.

In the afternoon was held the first business session for contractors and contractor-dealers.

Two men, Arthur L. Abbott, and J. J. Caddigan, were elected to honorary membership in the Association of Electragists, International. Mr. Abbott was for many years an active member of the association, serving as a member of the executive committee, and giving much time to the development of the electragist manual of estimating. During the past four and a half years he has served as technical director, leaving on August 1, 1928, to take a position in the uniform ordinance department of the Society for Electrical Development.

Mr. Caddigan is superintendent of relations with the allied interests department of the Edison Electric Illuminating Company, Boston, Mass. He was elected to honorary membership because he has stood for many years in his territory for the development of the contractor-dealers' interests by the central station with which he is connected.

The committee on revision of constitution and by-laws then reported. James R. Strong, chairman, stated that the principal object of the amendments is to increase the influence of the local associations, giving them a definite responsibility to cast the votes for their membership. In furtherance of this plan the dues have been put on a flat annual basis of fifteen dollars for all members. The changes as approved by the members of the association are as follows:

To conventions in the future, chartered groups of electragists will send delegates who will be entitled to cast the votes of the entire local membership, and thus the business transacted will be the expression of the opinion of all the members. Individual members who attend the convention will be entitled to cast individual votes.

The president and a vice president will hereafter be elected at the convention by a majority of members present and represented by delegates. Members of the executive committee will be elected at the convention by delegates

and members present from each division, instead of by mail ballot as formerly.

Under the new constitution, groups of electragists in prescribed territories may form local or state associations and receive charters from the International Association. Every member of these local associations must also be a member of the International.

The annual dues of members, beginning January 1, 1929, will be fifteen dollars each, regardless of the size of the contracting company.

Local associations, chartered by the International, may pass upon all new applications for membership from their prescribed territory.

In the discussion on the amendments, Laurence W. Davis, general manager, explained the change in the dues by saying: We might have an association limited to a very small group of men who were interested in particular problems and who might put up a very large sum of money. It might be conceivable that a hundred men might put up $2,000 apiece. But I believe that as a group in this industry we are looking forward to having six or eight thousand, and I hope, some day nine or ten thousand."

It was announced that the executive committee has decided not to give the data book to every member in the future, but only release copies to those members who want it, at a definite price.

There was considerable discussion over the name of "electragist", a number of members pointing out that the word was hard to pronounce and spell and difficult to the public to understand. Discussion was lively over the possibilities of the word as a trademark, and it was pointed out that very little effort had been made by members to impress it upon the public attention. It was the opinion of most of the members present that the word could be made a distinguishing mark for a reliable electrical contractor, so that the public would turn to an electragist by preference.

After the discussion it was voted to refer the subject to the executive committee for investigation and report back to the next convention.

A. B. Zerby, chairman of the National Electrical Manufacturers' Association Committee on Filing Systems, reported the results of the joint study with the electragist committee, including G. P. Fuerst, and Arthur L. Abbott, of a standard filing system for catalogs. Mr. Zerby explained the need for a uniform system of filing catalogs and other trade literature so that a clerk could find what was wanted with the least trouble. The recommended system was that of the American Institute of Architects, so that electrical manufacturers can print the file label on all material going either to architects or contractors.

After a demonstration of the system, it was adopted by vote of the members.

The president then introduced S. B. Williams, editor of THE ELECTRAGIST, who spoke on the wastes that may occur in a construction job and how they can be avoided. After a discussion, the meeting adjourned.

On Wednesday morning, the first general convention session was held, opening with the president's message, by Clyde L. Chamblin. W. Malott, of Harvard University, then read the paper of Philip Cabot, Professor of Public Utility Management, Harvard University, who was unable to be present, on "Merchandising by Central Stations".

Merrill C. Morrow, vice president of the appliance division, National Electrical Manufacturers' Association, explained the organization and operation of the N. E. M. A. Every problem, he said, is approached by a carefully worked out procedure which gives every manufacturer an opportunity to be heard, and which results in a final decision representing the consensus of opinion of the industry.

Mr. Morrow made a plea for cooperation in the electrical industry which would bring to it a proper share of the consumer's dollar. "The time for organized electrical industry effort is here," he said. "The necessity is very great and every association, manufacturer and individual should become interested in the electrical development movement."

The next speaker was E. O. Shreve, manager, industrial department, General Electric Company, who took up the subject of motor distribution and the problems connected with it. He was followed by L. K. Comstock, A. E. I. national councillor to the U. S. Chamber of Commerce, who addressed the meeting on "The New Cooperation."

On Wednesday afternoon, August 8, the second business session was held, with open discussion upon merchandising and wiring policies. In general, it developed that central station actions which work to the detriment of electri-

Twenty-Eighth Annual Convention

cal contractors are being reduced through cooperative conferences. C. J. Geisbush, of California, explained the plan in operation on the west coast by which the committees of electragists meet with committees of public utility men with encouraging success.

Earl N. Peak, described the Iowa cooperative method of settling differences between contractors and central stations which was working out with great success. He made a plea for a sane and sensible method of solving intra-industry problems through local committee meetings and through meetings between representatives of the national associations.

The Electragist Standards for Wiring Installations were adopted at the session, after an explanation by A. Penn Denton, chairman of the standards committee. The purpose of the standards is to define what constitutes best practice in wiring installations, involving the considerations of safety to life and property, permanency, adequacy, efficiency and economy of operation, with proper regard for cost.

The Electragist Standards when completed will include the engineering design of installations, the definitions of the types of wiring suitable for use under various conditions, general requirements relating to safety and operating efficiency, and specifications for materials and apparatus and the methods of installing the materials and apparatus.

An important part of the standards, approved by the association, was the section giving standard definitions to many electrical and construction terms which have heretofore been more or less loosely used. The section on engineering design of installations has not yet been prepared. The section on types of wiring required under given conditions was published and accepted by the association, as was the section on specifications for materials and apparatus and their installation. Members of the committee on the A. E. I. Standards are: A. Penn Denton, chairman; G. E. Shepherd, J. H. Schumacher, Allen Coggeshall, A. C. Brueckmann, W. Creighton Peet, and Arthur L. Abbott, secretary.

After the business session, the two labor sections held separate meetings, the union shop section under the direction of L. K. Comstock, acting chairman; and the open shop section under S. J. Stewart, chairman.

The motor specialists held several very important meetings, during which a plan for motor distribution was prepared and presented to representatives of the motor manufacturers. The details of this plan are reported elsewhere in this issue.

A general assembly was held in the early evening in the grand ball room, with an address by John F. Gilchrist, vice president, Commonwealth Edison Company of Chicago, on "A Mid-Summer Night's Dream".

At the general convention session Thursday morning, Victor H. Tousley addressed the meeting on the subject of the National Electrical Code and Frederic P. Vose discussed credit and credit policies. J. J. Caddigan described the methods by which the Boston Edison Company promotes the sale of electrical wiring and appliances through helping contractors and dealers.

The final convention session on Friday morning was devoted to general discussion of motor dealers' problems, and the adoption of resolutions thanking the members of the Chicago committees who planned and carried through the successful twenty-eighth annual convention.

A report of the activities of the estimators section of the South Pacific Electragists, explained the method of operation, through the following working committees: Architects and engineers, data, ordinance, convention, estimating, job control, program, school, editorial, entertainment and finance. This section publishes an official journal, "The Estimator", in mimeographed form, with serious and humorous items of interest to all members of the group.

The executive committee held several sessions, voting to subscribe $500.00 to the National Electrical Code field service work and $750.00 to the industry sales conference market survey.

James R. Strong, of New York, was elected executive committeeman at large.

Members of the convention committees were: Leo E. Mayer, general chairman, executive committeeman, Great Lakes Division, A. E. I., president, White City Electric Co., Chicago; William McGuineas, vice-chairman, president, United Electrical Construction Co., Chicago; Ralph G. Raymond, secretary, The Electric Association, 30 North Dearborn Street, Chicago.

Samuel A. Chase, special representative, Westinghouse Electric & Manufacturing Co., Mansfield, Ohio; J. Walter

Association of Electragists, Int.

Collins, secretary, Electrical Contractors' Association of Chicago, Chicago, Ill.; William H. Colman, manager merchandise, General Electric Co., Chicago, Ill.; R. Bourke Corcoran, manager, The Electric Association, Chicago, Ill.; Fred E. Deal, manager Operat. Div. Elec. Adv. Serv., Federal Electric Co., Chicago, Ill.; John A. Duncan, vice-president, Illinois Electric Co., Chicago, Ill.; Fred R. Eiseman, secretary and treasurer, Revere Electric Co., Chicago, Ill.; John F. Gilchrist, vice-president, Commonwealth Edison Co., Chicago, Ill.; James O. Kelso, president, Kelso-Burnett Electric Co., Chicago, Ill.; A. H. Kirkland, secretary, Publications Committee, Insull Interests, Chicago, Ill.; John Kuhlemeyer, secretary, Illinois Chapter, Association of Electragists, Maywood, Ill.; Miss Alva Larson, secretary, Women's Division, The Electric Association, Chicago, Ill.; E. W. Lloyd, vice-president, Commonwealth Edison Co., Chicago, Ill.; Fred F. Skeel, western sales manager, Crouse-Hinds Co., Chicago, Ill.; Richard Weber, president, Weber Electric Co., Chicago, Ill.; Martin J. Wolf, vice-president, Electric Appliance Co., Chicago, Ill.; A. I. Appleton, president, Appleton Electric Co., Chicago, Ill.; R. C. Bennett, vice-president, I. A. Bennett & Co., Chicago, Ill.; T. H. Bibber, Chicago, Ill.; Charles E. Brown, vice-president, The Okonite Co., Chicago, Ill.; William S. Boyd, secretary, Western Association of Electrical Inspectors, Chicago, Ill.; B. R. Cooper, Chicago commercial manager, Illinois Bell Telephone Co., Chicago, Ill.; E. M. Craig, general manager, United Light & Power Co., Chicago, Ill.; C. A. Dostal, district manager, Westinghouse Lamp Co., Chicago, Ill.; E. A. Edkins, chairman, Electrical Division Chicago Association of Commerce, general manager, electric shops, Commonwealth Edison Co., Chicago, Ill.; A. L. Evans, president, Standard Electric Co., Hammond, Ind.; A. M. Ferry, secretary-treasurer, Electrical Porcelain Manufacturers' Association, Chicago, Ill.; Ernest Freeman, president, Freeman-Sweet Co., Chicago, Ill.; H. L. Hanley, vice-president, Illinois Power & Light Co., Chicago, Ill.; A. B. Harris, president, Lighthouse Electric Co., Gary, Ind.; Walter F. Hoagland, district manager, Graybar Electric Co., Chicago, Ill.; H. D. Hawks, sales manager, Anaconda Copper Mining Co., Chicago, Ill.; William H. Hodge, vice-president, Byllesby Engr. & Mgmt. Corp., Chicago, Ill.; George A. Hughes, president, Edison Electric Appliance Co., Chicago, Ill.; W. A. Jackson, president, W. A. Jackson Co., Chicago, Ill.; John G. Learned, vice-president, Public Service Co. of North Illinois, Chicago, Ill.; W. E. McCullough, president, Best Electric Co., Gary Ind.; A. J. McGivern, manager, Manhattan Electrical Supply Co., Chicago, Ill.; T. O. Meade, president, Meade Electric Co., Chicago, Ill.; A. H. Meyer, general manager, Midland Lamp Div., National Lamp Works of G. E. Co., Chicago, Ill.; Edward Morley, L. K. Comstock Co. (Chicago Estimators' Assn.), Chicago, Ill.; J. Norman Pierce, president, Pierce Electric Co., Chicago, Ill.; Marshall E. Sampsell, president, Central Illinois Public Service Co., Chicago, Ill.; Louis Sisskind, president, Central States General Electric Supply Co., Chicago, Ill.; W. C. Sharp, vice-president, Middle West Utilities Co., Chicago, Ill.; W. A. Stacey, western manager, Bryant Electric Co., Chicago, Ill.; William States, district sales manager, Edison Lamp Works of G. E. Co., Chicago, Ill.; Neal Thompson, president, Industrial Electric Co., Chicago, Ill.; Victor H. Tousley, chief electrical inspector, Department of Gas & Electricity, Chicago, Ill.; A. E. Tregenza, vice-president, Chicago-Jefferson Fuse

(Continued on Page 32)

Annual Banquet, A. E. I., August 9, 1928.

A Challenge to Electragists*

By CLYDE L. CHAMBLIN
President, Association of Electragists, International

THOSE of you who attended our last convention will remember that I emphasized the need for friendship, tolerance and loyalty to our industry. Due to your local conditions some of you may feel that little progress has been made within the industry along these lines, but taking the industry as a whole I feel that a very substantial gain has been made. You will remember the very fine addresses made at St. Louis last year by the leading men of the other branches, each pledging his branch to a more sincere and studied effort to assist the industry as a whole, and our branch in particular, in bringing about a more united industry.

During the year we have seen real and tangible evidences of these pledges. Thousands of letters have been sent out to the contractor-dealers of the country, setting forth the desirability for membership in our Association. Local jobbers and manufacturers' representatives have cooperated in membership drives, and representatives of our Association have been invited to attend and take part in conventions of the various branches throughout the country. Leading men of the industry continually refer to our Association in the most complimentary terms, and recommend helpful cooperation to their constituents. Power companies, manufacturers, and jobbers in increasing numbers are advising the public through newspapers and magazines to patronize only reliable and well established contractors.

And now I would like to ask a searching question of each electragist here. Are you sincerely doing your part to bring about conditions in your community under which a harmonious, united industry can function? Are you conducting your business along lines that will command the respect and cooperation of your competitors, as well as the other branches? Is your ideal for an association to be a coddled child of the other branches, ready to cry the minute meal time is a little late, or do you realize that you are entitled to nothing that you do not deservedly earn?

Clyde L. Chamblin

We have no right to ask of anyone those things which we can and should do for ourselves. The growing good will and help of the other branches but adds to our responsibility to make good, and every man or organization that uses the name of electragist has a double responsibility in carrying out our high ideals.

To me the big handicap of our branch of the industry today lies in the pitiful lack of men in each community who are so conducting their business, and are unselfishly giving of their time to industry betterment, that they inspire the confidence of their competitors. I would rather be a member of a local association composed of four square shooters, men whom I could call on at any time as friends, men who always have time for a meeting to discuss industry betterment, than to belong to an association composed of four hundred suspicious, greedy volume hounds, always "alibiing" their way out when caught in a shady deal.

Too many contractor-dealers of this country think of the A. E. I. as a great, omnipotent force, when aside from its small staff, it is only what each individual member makes it. Is it getting good local industry support? Then it is because its local representatives deserve support. Is it receiving national cooperation and recognition? Then its policies and actions must command such recognition because they are sound and constructive.

Fellow electragists of this 1928 convention, in this brief address, may I not challenge you to the proposition that the degree of success of your association is dependent on the fellow you look at each morning in the mirror, and the value of the name electragist will be elevated or retarded by the way you conduct your business?

Under the inspiration of this great convention, with a program worthy of the careful attention of any group of business men, let us here resolve to give more time and study to our own trade relationships, within our own group, and less time to trying to pass the blame onto other groups for unsatisfactory conditions, and when we have our own house in order we have little to fear from others, but on the contrary will command the respect and cooperation of all. In common with most lines of business we are suffering from an over-production: an over-production of material with its resultant evils of price wars, and an over-production of competitors caused by the romance that attaches to our rapidly developing industry. We are suffering from growing pains, and we are gathered together here in this laboratory—or so-called convention—to bring to bear our best thinking and research to see that these pains do not become chronic.

The A. E. I. is the official, nationally and internationally, recognized representative of the contractor-dealer branch of the industry. It was organized by contractor-dealers and its sole purpose and object is to better equip its membership to cope with the problems that beset it, and to safeguard its interests in every way within its power. You are a unit of this power, and with your shoulder to the wheel, just that much sooner will conditions within our group and within the entire industry be improved.

*Address before the Twenty-eighth Annual Convention, Association of Electragists, International, August 8, 1928.

S. B. Williams

Wasted Profits*

An Analysis of Job Management Problems Which Must Be Solved by Successful Contractors

By S. B. WILLIAMS
Editor, The Electragist

THE place in which contractors have the greatest waste of money and profits is in the administration of labor—the productive labor on the job.

If the electrical contracting business would run along at 100 percent load curve, we would have removed one of our greatest troubles. Unfortunately, however, in this business we are running at a peak for a few months of the year, and in a valley the other months.

An uneven load curve wastes profit, because it maintains an overhead in the office. If that overhead is to be properly distributed we must operate as near a hundred percent load as we can.

Sufficient work must be provided to keep the men on the job stepping lively. And when I speak about the administration of productive labor I want it understood that I have not in mind any methods which will force labor—such as sweat shop methods. Labor is happiest when it is working along all the time. Labor is unhappy when it doesn't see enough work ahead to keep it busy. Labor that is constantly loafing on the job is not happy labor. Labor that is loafing on the job is apt to become Bolshevistic. If you can provide enough work for your men, so that they can see work ahead all the time, they will engage in the work they are doing in a happier spirit, and produce more than they will if they do not see much work ahead.

It is also advisable, in order to prevent some of this waste, to take only those jobs that you can handle. It is unfortunate that some men, capable of handling only a five thousand dollar job, will, in a time of stress, try to take on forty, fifty or sixty thousand dollar jobs, on which they lose money, because they are not able to minister them properly. They don't know how to handle the volume of labor necessary to do those larger jobs. They don't know how to buy materials properly. They haven't sufficient tools or of the right kind, and when they get through they find that they have spent more than they had estimated, simply because they didn't know how to handle the job. Their profits are wasted.

Few contractors know every day, exactly the progress of the job on which they are working—either with relation to the whole job, or a part of it—with the result that few are even able to determine where the losses are occurring at the time when the losses are taking place. If you have a job progress chart you will be able to determine how well you are stepping along with that job; and if something is going wrong, that is not apparent on the surface, you can investigate and detect the cause.

In order to conduct jobs properly we need men who are accustomed to directing the workmen, namely foremen. The foreman should be chosen because of his ability to administer labor. Just because a man is a good wireman or because he gets along well with his fellow journeymen, does not, necessarily, mean that he would make a good foreman. A good foreman is an administrator—he is a sub-executive.

A hotel job of some size was recently taken on which the estimate had been carefully figured. Within two months it was found that the labor hours on that job had, up to that point, far exceeded the estimate. Upon investigation it was discovered that the foreman who had been put on the job, while a good workman, and a man who got along well with his fellow workmen on the job, as a workman, was a very poor foreman. He was removed and before it was completed that loss in labor had been recovered because of the efficiency of the new foreman.

A way must be found to train foremen for electrical installation work. They must be trained to conduct a job intelligently, and, at the same time, keep the goodwill of the customer, keep the men happy and make profits for their employees. It is very important that the electrical foremen work harmoniously with the other trades on the job. A foreman who cannot work well with the heating men, or the concrete men, will get the electrical contractor into all kinds of trouble very quickly. You know what the other trades can do to you. They can hold up your work, causing you to put in extra hours on the job, and waste profits for you at every turn. On the other hand, if your foreman is a man who can gain the confidence and respect of the foremen in the other trades, he can get you better than even breaks, and help you save money on the job which, otherwise, you would have wasted.

Some profits are wasted by trying to lay the job out on the job, by trying to make a draftsman out of the foreman.

Contractors should do in the office all the work that it is possible to do in connection with the job, so that when the expensive workmen get on the job they can go through with it without losing time.

When plans are submitted by architects and engineers, they should be gone over to see whether it is possible to install the job practically as laid out. As a rule you will find that you will have to make your own working plans, so that the foreman will understand the job clearly and know what is to be done, in order to put it through as quickly and as expeditiously as possible.

The buying of materials is very important, if one is to save labor on the job. The way that materials are to be received on the job must be scheduled.

*An address at the Twenty-eighth Annual Convention, Association of Electragists, International, August 7, 1928.

What would happen if you scheduled your pipe in such a way that by the time you were ready to put in 3-in. pipe all you had was inch pipe, and your men had to wait around a day or two for the proper size pipe to get on the job? Or, what would happen if you needed 5,000 ft. of pipe and all you received was 3,000 ft.?

The material should arrive reasonably in advance of the time it is needed. It is not necessary to have all the material on the job at the beginning. In fact, you will find that you lose considerable on every job to which you send all the material well in advance of the time it is needed. The breakage and deterioration on that material runs into real money. The material might be in the way of the other trades and might have to be moved to other parts of the building, putting it in a place where it requires considerable labor to get it out when you need it—all that spells loss.

Also, a contractor should try to schedule his job and the arrival of the materials on the job, so that he does not pile up too much investment cost. Try to make the job carry itself as much as possible.

A contractor can save money by taking discounts if he will have material sent to the job in such a way that invoices can be received not too far ahead of the time that he is paid for that portion of the work.

Try to store materials on the job reasonably close to the point where they are going to be used. It is not good business to put all the material down on the first floor of a twenty-story building, and have to keep carting material up and down, and back and forth. Much can be saved in labor in the transportation of materials on the job if deliveries are made to a convenient position.

Care should be taken to have the right kind of mechanics on the job. The man who installs light work—such as low tension work—is not a good man to use on pipe work. It is seldom that you are able to get a man who is good on all kinds of work. If you are operating on big jobs you should make sure that your organization can handle the materials used on such jobs. The wrong kind of men on a job can cost you a lot of money in the loss of profits.

Many contractors have wasted profits by having too many men on the job, thinking they could speed up the job by having a large number of men. While they may get through in a fewer number of days, the labor hours will run up on that job, because the men get in each other's way. A job is handled much better by having just enough men to get it through in the specified time.

Mechanics should have a better knowledge of the Code and the local ordinances in force in the town in which the work is being done. Much money is lost because the foreman and the mechanics do not thoroughly understand the governing wiring regulations.

Recently Louisville held a Code school for mechanics, and the mechanics were well pleased with the opportunity to go to that school after working hours, on their own time. Such a plan might be well to put in force in other cities.

Causes of Waste

1—An Uneven Load Curve
2—Insufficient Work Ahead
3—Too Large Jobs
4—Poor Foremen
5—Improper Job Layout
6—Materials Arriving Late
7—Wrong Use of Mechanics
8—Too Many Men on the Job
9—Poor Tools
10—Accidents
11—Bad Scheduling of Small Jobs

Because labor is costing more and more all the time, it must be provided with proper tools. Get good tools. Don't be satisfied with cheap tools. If two tools are offered to you, one at a much lower price than the other, be afraid of the low priced tool. Don't try to force a tool to the utmost before sharpening. Keep your tools sharp; keep them clean. Sharp tools save the time of the men to whom you are paying anywhere from a dollar to a dollar and a half an hour. A hacksaw blade may be pushed to the point where the saving of a few pennies in its use will cost you dollars in wasted labor.

Theft takes some of the contractor's profits because materials are not stored properly, and particularly because the tools are not kept in a proper place. Tools cost money. Provide tool boxes —substantial tool boxes, with a lock and key, and make somebody responsible to see that each evening the tools are all placed in that box. If a tool is given out to a mechanic make sure that that mechanic returns that tool. Make the foreman responsible for that.

In the cities in which the five-day week has been in force we have found that the contractors are well pleased. As a result of an investigation we find that you save considerable loss in time if you can reduce the loss due to inefficiency on Saturday morning. The men are worth much less, as productive workmen, on Saturday morning, than they are on any other day in the week, and particularly in the summertime.

Almost everybody provides accident and liability insurance to cover wiremen, but the insurance received does not cover the loss to the contractor on account of the accident. All it does is to cover the workmen. The productive time that the contractor loses because of the accident, costs much more, frequently, than the injured man receives. When a man is hurt, the contractor not only loses the man's productive time, which is supposed to earn a profit, but the other workmen on the job gather 'round and chin and talk, and thus waste time. They waste time immediately after the accident, and then when the victim is taken away they waste time talking about it. Their efficiency drops down, and when the man who has been injured comes back on the job, his morale is greatly reduced, for a time, and particularly when he goes back on the kind of work he was on when he had his accident. His productivity slows up. That cannot be covered by accident insurance, yet it adds to the wasted profit.

Moreover, there is the report to be sent to the people handling the insurance, and that report costs a lot of money. If you don't think so try to analyze all the steps through which you must go when you have an accident on a job. You will find that the time involved costs a lot of money, and that comes out of your profit.

Much labor is wasted in the manner in which men are scheduled on small work. Not long ago I was in a small contractor's office at nine-thirty in the morning. The time of the men started at eight-thirty, and there were three wiremen there waiting to be sent out on jobs, simply because that contractor did not have the proper means of scheduling men on work. Somebody should

(Continued on Page 52)

The New Electrical Code*

An Explanation of Some Important Features of the New 1928 National Electrical Code

By VICTOR H. TOUSLEY
Electrical Field Engineer, N. F. P. A.

THE 1928 Code will shortly be off the press, and I would like to point out a few of the high spots which will serve to indicate present Code tendencies.

The present tendency of the Code, to provide for more economical construction, is indicated in many new developments of the new Code. There now appears a complete and comprehensive provision for wire sizes for motors based on the type of motor and the wiring method used. Aside from the economical features of this rule, which should, incidently, result in the saving of many dollars to the current using public, is that desirable standardization which permits the contractor to accurately determine his wire sizes in advance of installation and which tends to make the wire size demands uniform in all territories.

There is probably no rule in the National Electrical Code more important to the industry, and to the contractor particularly, than that rule pertaining to the branch circuit. This rule has gone through a continual evolution and the present revision, while not considered perfect or final, is a step in advance. To devise a satisfactory rule covering this subject involves a variety of factors. In the first place a condition of probability must be anticipated, for when the circuit is originally laid out, its future loading is, at best, only a guess. The primary requisite of a circuit from the Code standpoint is, of course, safety, but this is not the only requisite.

It must be economical in permitting the fullest use of its copper capacity and not restricting the probable future load in any manner which will produce a needless expense in unused copper capacity. It must be so flexible that it will not react against the installation of the greatly desired convenience outlets recommended by the several wiring plans. It must provide for the many

Victor H. Tousley

useful appliances now developed for connection to the branch circuit. It must be so reliable that its future loading will not blow the fuses protecting it. It must be economical also that there will not be too great a loss of voltage at the lamps or too great a loss of wattage in the copper of the circuit. The rule must be so reasonably simple that it can be easily applied.

These are some of the factors which have entered into the 1928 Code provisions for the branch circuit.

Probably the most novel and daring innovation of the new Code is the provision for applying a demand factor. It is a known fact that the maximum load ever occurring on a set of mains is much less than the total load connected to the mains. The percentage of loading varies with the type of building and with the area served, and while demand factors have been applied by some inspection departments, the uncertainty of the problem and the amount of knowledge and effort necessary to apply the demand factor have discouraged most inspection authorities from attempting to use it. A very competent committee headed by one of the members of your organization has expended a great deal of time and effort during the past several years and have developed a complete and what is considered a fairly accurate solution of this problem which will appear in the forthcoming Code. As this Code rule is related so directly to the contractor's work, it is hoped that you will carefully study and conscientiously apply it so that you may be in a position to offer through your organization constructive suggestions for its enlargement and betterment.

The electric range load, to which a demand factor is especially applicable, is provided for in this Code rule and the fear so frequently expressed that the cost of feeders discourages the installation of electric ranges is now overcome. Also, the neutral load, which we have known for years was much under that of the outside wires, is provided for in the new rules.

The solution of the demand factor problem, aside from its value from an economical standpoint, will also tend to standardize and stabilize the contractor's work in its tendency to eliminate the opportunity for the many gross variations in mains and feeders that have occurred in past installations.

There is a class of installation which has been the cause of many misunderstandings and contentions—the installation of electrical apparatus in grain elevators, gas plants and plants of a similar hazardous nature. While the revision of this particular section of the Code has been brought about out of regard to the life and fire hazard, its solution is also of considerable value to the contractor in figuring jobs of this type. The application of the rules in the older issues of the Code were uncertain and difficult, and these uncertainties continued until the job was finally completed. The new requirements, set out in clear detail, are practically all the information the contractor needs to know in figuring a job of this type, and

(Continued on Page 40)

*Part of an address at the Twenty-eighth Annual Convention, Association of Electragists, International, August 9, 1928, Chicago, Ill.

Trade Relations in the Electrical Industry*

What About the Manufacturer? What About the Central Station? What About the Jobber? What About the Contractor-Dealer?

By A. PENN DENTON, Kansas City, Mo.

IN the pioneering period when each year the manufacturer, the jobber, and the central station were anything but sure of the profit on their business, they cooperated 100 percent with the contractor. But as our industry grew rapidly and profits came faster and easier all of these industry groups became more and more competitors of the contractor. Instead of maintaining and in many cases, increasing the possible margin of profit on electrical merchandise as increased production permitted lower costs to the public, the manufacturer gave very little thought to the profits needed on much of this merchandise by the contractor. Many manufacturers have ignored or thrown away profits which quantity production in wiring materials made possible and have even made prices so low in competition with the contractors that in recent years quite a number of wiring materials have had quality cut to a minimum and in a few cases there have been produced wiring materials so sub-standard that they could not meet Underwriters' Laboratories' approval.

In recent years in some cities and territories the jobbers in their scramble for business, have had much less regard for ethical trade practices in competition with the contractor-dealer who was their very best customer in the earlier days.

And last, but by no means least, of these offenders, have been the central stations. As their business has grown rapidly during the past ten years, they have very generally forgotten the contractor's help in the good old pioneering days, and with load coming to them so fast they have with difficulty taken care of it, they have built great merchandising organizations which have very little concern for the contractor's welfare. Their principal concern has been with good public relations but with very little thought given to the fact that good industry trade relations cost them very much less and in the end will prove their best means of influencing good public relations at a minimum expense.

There comes a time however, when all unusual prosperity with its corresponding selfish group interest must give way to a greater consideration of the other fellow when business begins to fail and today our industry is finding this out. In the planning and undertaking of a new market development program we must improve and look to closer, cleaner trade relations between all groups of our industry family, if we are to succeed in getting our fair share of the public's dollar in the years just ahead.

As a direct result of the splendid work done by many of the larger electrical leagues throughout the country in recent years we recognize the possibilities of carrying forward a broad market development program sponsored by all our clubs and leagues. Such a program can be successful only when the members of each league, representing as they do manufacturers, central stations and contractors, are able to work together harmoniously for our industry's common good. This means full recognition and use of all channels of distribution now available for serving the public. The distribution of electrical merchandise should be from manufacturer to jobber, from jobber to contractor and central station, then to the consumer. The interests of each group in this plan of distribution, have been well established for years, in such industries as hardware, lumber and plumbing. This plan is economically sound and with the production of manufacturers normal in the different lines of products, the price situation takes care of itself and the public is well served.

A. Penn Denton

The electrical industry in the past however, has been too much concerned with the price the public has to pay and too little concerned with the economical service rendered. The manufacturers, jobbers, and contractors have too often ignored one another in their scramble for business. Manufacturers have sold contractors direct when their products should go first to jobber and then to contractor. Jobbers have ignored the contractors in selling, particularly the large industrials and have for years been selling this trade at the same prices as the contractor, thereby cutting him out of a large volume of business which if sold through the contractor would have netted the jobber just as much business volume and very nice profit.

Due largely to this influence of manufacturer and jobber ignoring the contractor-dealer channel of distribution, the contractor himself, in self-defense, has been meeting this competition from his own industry groups by taking his business on a quantity or volume basis at gross profits insufficient to even pay overhead expense.

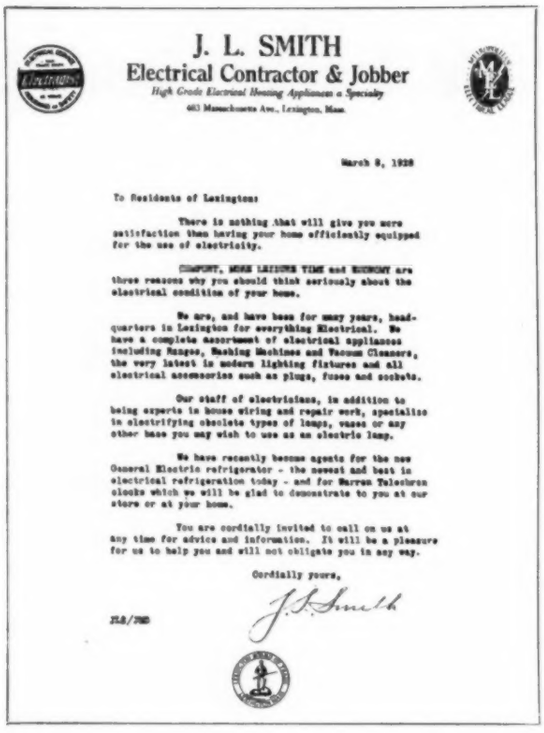
(Continued on Page 40)

*Part of an Address at the Quarterly Luncheon of the Electric Association of Chicago, Ill., August 7, 1928.

How Central Sta
Aid the Con

ONE central station, the Edison Electric Illuminating Company of Boston, believes that its prosperity can be improved by cooperating with the contractor-dealers in its territory, helping them to sell more wiring and appliances, and working with them instead of competing against them.

Under the direction of J. J. Caddigan, superintendent, relations with allied industries department, this utility has made a big success with its promotion campaign to increase the contractor-dealers' sales and thus indirectly build up the load of the central station. The activities of this company are carried out along the following lines:



J. L. SMITH
Electrical Contractor & Jobber
High Grade Electrical Heating Appliances a Specialty
463 Massachusetts Ave., Lexington, Mass.

March 8, 1928

To Residents of Lexington:

There is nothing that will give you more satisfaction than having your home efficiently equipped for the use of electricity.

COMFORT, MORE LEISURE TIME and ECONOMY are three reasons why you should think seriously about the electrical condition of your home.

We are, and have been for many years, headquarters in Lexington for everything Electrical. We have a complete assortment of electrical appliances including Ranges, Washing Machines and Vacuum Cleaners, the very latest in modern lighting fixtures and all electrical accessories such as plugs, fuses and sockets.

Our staff of electricians, in addition to being experts in house wiring and repair work, specialize in electrifying obsolete types of lamps, vases or any other base you may wish to use as an electric lamp.

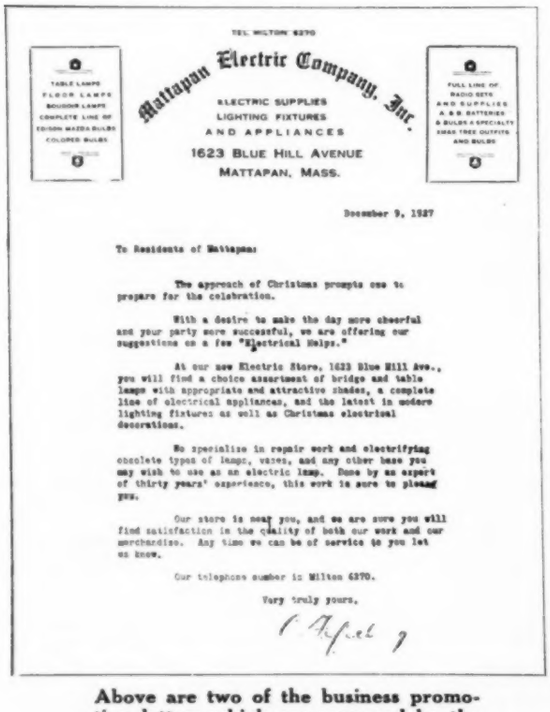
We have recently become agents for the new General Electric refrigerator - the newest and best in electrical refrigeration today - and for Warren Telechron clocks which we will be glad to demonstrate to you at our store or at your home.

You are cordially invited to call on us at any time for advice and information. It will be a pleasure for us to help you and will not obligate you in any way.

Cordially yours,

J. L. Smith

JLS/RH



TEL. MILTON 6370

Mattapan Electric Company, Inc.
ELECTRIC SUPPLIES
LIGHTING FIXTURES
AND APPLIANCES
1623 BLUE HILL AVENUE
MATTAPAN, MASS.

December 9, 1927

To Residents of Mattapan:

The approach of Christmas prompts one to prepare for the celebration.

With a desire to make the day more cheerful and your party more successful, we are offering our suggestions on a few "Electrical Helps."

At our new Electric Store, 1623 Blue Hill Ave., you will find a choice assortment of bridge and table lamps with appropriate and attractive shades, a complete line of electrical appliances, and the latest in modern lighting fixtures as well as Christmas electrical decorations.

We specialize in repair work and electrifying obsolete types of lamps, vases, and any other base you may wish to use as an electric lamp. Done by an expert of thirty years' experience, this work is sure to please you.

Our store is near you, and we are sure you will find satisfaction in the quality of both our work and our merchandise. Any time we can be of service to you let us know.

Our telephone number is Milton 6370.

Very truly yours,

Above are two of the business promotion letters which are prepared by the Boston Edison Company for contractors and mailed to light customers in their territories, the only charge being for the postage

To the right are two contractor-dealer windows which were dressed without cost by the central station. These windows are changed frequently

Stations Can Contractor

1. Advertising in daily newspapers telling people to "rely on your electrician."

2. Advertising on bill boards and car cards.

3. Promotion letters are written and mailed for contractors to electric customers in their territory, the only charge being the postage.

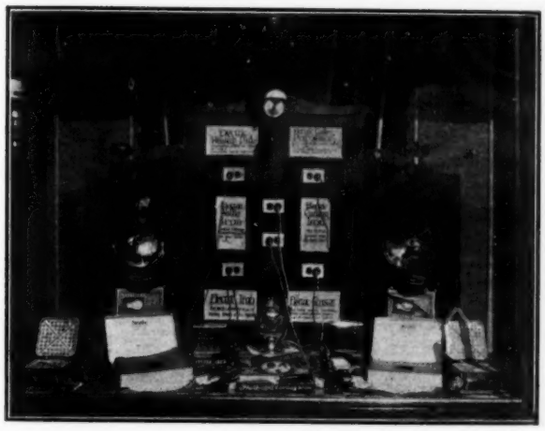
4. Windows are dressed free by central station window-dressers.

5. Community electrical shows are run in many suburbs, booths being provided without charge for contractors.

6. A contractors' exclusive information division, with a special telephone, is maintained where inquiries can be answered within an hour.

7. Blotters are printed for contractors, with their own names and addresses imprinted.

8. A two act talking motion picture has been made which may be borrowed and displayed by contractors.



Complete background provided for contractors' windows

Your ELECTRICIAN

Will Show You the Efficiency of Electric Cooking

YOUR Electrical Dealer has made a study of cooking and he knows that electricity is most satisfactory from the standpoint of efficient results. He has learned from experience that electric ranges are a pleasure to use . . . no soot, smoke, flame, or ashes . . . no excessive heat or fumes.

There are many reliable makes of electric ranges on the market in models to suit the requirements of large or small families. Ask your Electrical Dealer to show you one that fits your needs . . . his experience will guide you in your selection . . . and you can rely upon his suggestions.

RELY UPON YOUR ELECTRICIAN

THE EDISON ELECTRIC ILLUMINATING COMPANY OF BOSTON

ELECTRICITY— Ready to Serve You!

Electricity means more today than merely illumination. It furnishes comfort and convenience that make the home more enjoyable and household duties more quickly and easily accomplished.

Think of being able to "plug in" to a handy "convenience outlet"—and have the pleasures of electrical refrigeration, cooking and labor-saving devices ready to serve you at an instant's notice. Electricity is yours to use—at a small cost.

That's why you should investigate home wiring—and learn about the new economical rate for electrical refrigeration and cooking.

Electricity is waiting to serve you—to increase your enjoyment of life—to make your property more valuable.

Have a Contractor Wire Your Home

GET in touch with your local Electrical Contractor. Tell him what you want and he will show you just how reasonably your house can be wired—how he will install new wiring—or increase your present installations to accommodate any new services you desire. He will tell you how it is possible, in many cases, to purchase your wiring and fixtures on easy monthly payments. He knows his job and he will help you in every way he can to get your share of electricity's benefits. Why not make it a point to see him today—before it slips your mind?

THE EDISON ELECTRIC ILLUMINATING COMPANY OF BOSTON

To the left and above are two of the newspaper advertisements which are run by the Boston Edison Company in all the local newspapers. This campaign emphasizes the electrical contractor, suggesting to the public that he can be relied upon. The above advertisement was awarded first prize in the advertising competition of the Public Utilities Advertising Association

One of the leading electrical contractors, L. K. Comstock, head of the company bearing his name, in this article pointedly and practically discusses the condition of the electrical contractor and the Association of Electragists, with suggestions for the future.—The Editor.

The New Cooperation*

By L. K. COMSTOCK
President, L. K. Comstock & Company

TEAMWORK, to be successful, must have a purpose, and that purpose must be clear, definite, and readily understandable. Keep four objectives in mind as fulfilling these requirements. They must be stated as follows:

(1) Money
(2) Membership
(3) Research
(4) Publicity

(1) Money

No vigorous cooperation can be realized without money. Everyone knows that we now show a deficit nearly every year; not only do we show a deficit each year, but those things most worthwhile doing are left undone and much that we ought to do is not even attempted. The administration should collect, arrange and disseminate all useful data and statistics about the industry, the whole industry, thereby placing itself in a position to speak for the industry. It should be able when speaking for the industry, to state facts in regard to the employment of labor; to state the facts in regard to the distribution of labor to the end of eliminating as far as possible seasonal employment, and locality unemployment; to state the facts in regard to the purchase of manufactured goods; to investigate the possibilities of better craftsmanship, and service to the public. The administration should have possession of the facts with which to combat the ever recurring attempts of central stations to encroach upon the construction and merchandising fields of our members by underselling the market and charging the losses into current production costs.

Our association last year collected in dues $36,000; if every member had paid his just dues, it is estimated that the treasury would have collected $50,000. The association's magazine and the sale of special service added to that fund $36,000, making a total available income of $72,000. Members and non-members who employ union labor had on their payrolls approximately 42,000 men. These 42,000 men pay annually $24 each into the treasury of their national labor organization, or a total of $1,008,000; about fourteen times as much as our members pay into our treasury. If our members would contribute $1.15 per day apiece to the association funds, we too would have a fund of a million to work with. If our membership could be increased to 7,500, our treasurer would collect a million dollars, if each member paid him 38 cents per day. By no means an impossible proposition.

It is said that some of our members take several contracts every year far below cost; if these members were to take one less contract of this sort each year and devote the saving to intelligent cooperative work the association's financial problem would be solved. We would have no difficulty in raising ample funds for fact finding, research and publicity.

(2) Membership

Today we do not sufficiently represent the industry. We do not know how many individuals, firms and corporations constitute the industry. Nor do we know how they should be classified. It is safe to say that our association does not constitute a tenth part of it numerically. It is safe to say also that there are at least twice as many engaged in the business as there is any economic need for. We should aim to quadruple our membership and then take such steps as seem wise, judicious and feasible to bring about consolidations in the interest of eliminating wastefulness in the duplication of energy and overhead.

We must put ourselves into the position of rendering a proper economic account of ourselves to the industry and to the public. That industry which can not give a good economic account of itself in this age of waste elimination must not expect even a moderate share of this great era of prosperity.

It is obvious that a great membership means a greater revenue; a greater revenue means vastly greater benefits to the membership and greater benefits means greater ease in still augmenting the membership.

'Tis a trite saying, that a man receives from an association no more than he puts in. I do not agree with this saying. If the association is doing the right kind of work, that kind of work which can only be done by cooperative effort, the member receives vastly more than he puts in. The benefits received from such work can scarcely be measured, certainly not by the yardstick of his own contribution.

(3) Research

We often lack the ability to think in general terms; we are shut up narrowly within our special occupations; and in our conversations ignore the larger problems. Moreover, when it is a question of discussing matters from the national standpoint, we do not possess the group spirit which would permit it to become organized.

A Department of Research should function every business day in the year, gathering and arranging statistics of the trade to the end that the peaks and the valleys in the curve of volume may be flattened out; that the number engaged in the business may more nearly correspond to the economic need and thus produce a steady flow of business locally and nationally. The problem of excessive competition confronts us; it grows worse instead of better; many isolated attempts to correct it

*An address before the Twenty-eighth Annual Convention, Association of Electragists, International, Chicago, Ill., August 8, 1928.

have been tried; many of them have been illegal; but all have failed. Modern research and cooperation—teamwork—must and will solve the problem. Diagnose the problem by means of statistics; get all the facts. The facts can only be obtained through organized effort. This is a prerequisite to any intelligent application of the remedy. The problem is beset with difficulties, but on that account it is most inspiring. Our greatest need is to break through the egg-shell which holds us in the static position and become dynamic, and take on something of the adventurous spirit of progress.

A Research Bureau could collect, arrange, tabulate and disseminate valuable exchange information with reference to volume and character of the business of each member; with reference to processes; experience with new materials; experience with jobbers and manufacturers. It could examine into the possibilities of mass buying; unfair practices, and unfair competition; it could standardize documentary forms; it could examine and disseminate information about practices in other trade organizations which might be beneficial to our members; it could collect and disseminate valuable items of credit information; and a great variety of other information, scientific, commercial, industrial and economic. It may be objected that much of the information of this character involving our membership is and should remain private. We must put that idea behind us, for our industry has either already outgrown it, or show outgrow it speedily. No permanent good attaches to secrecy in methods, processes, engineering data, or any other items capable of statistical treatment in modern industry.

It will not do to dismiss the idea of a research bureau by saying, "Yes, it's all right for the Portland Cement Association to spend its money in research and advertising—but our business is different—research can't help us any and advertising is money wasted." This is equivalent to saying, "We know all there is to know about this business and we have no message to broadcast." Collectively, we may know today many, perhaps all, the isolated physical facts of the industry. He would indeed be a bold man who would even make that assertion. But what means have we of coordinating these facts? Any method of coordinating facts introduces the personal element, and coordination is therefore a mental operation, to be undertaken by the most highly trained minds in the laboratory containing the largest store of facts.

Our business *is* different in detail from any other—hence the more need for research—our own research—since we cannot appropriate the results of research obtained by others. Relatively, the problems of research are of greater advantage to the smaller concerns, but all will profit by them, and if we are to fit our industry into the comprehensive economic system, we must know the facts in order to find our rightful place.

(4) Publicity

We call ourselves Electragists. But what is an Electragist? We know, but does the public know? The public knows about as much about the word electragist as it does about a clepsydra. There are persons who know that a clepsydra measures the passage of time by the flow of water, but how many? There are those who apply the term electragist to a journeyman electrician. There are those who pronounce the word as though it were spelled electrogist. I have even heard it pronounced electrologist, indicating perhaps, that our craft pursues its calling with guidance from the stars and the signs of the Zodiac. The word ELECTRAGIST is capable of being capitalized, is capable of carrying a very definite meaning to the public, and of becoming a very real asset and a source of profit. It can be made to perform the very real service of differentiation. In using a trade name, it is essential to remember that its value depends very largely upon the degree to which it is known and accepted. Advertising informs, educates, establishes concepts of value and creates and directs demand. Research and advertising are correlative, mutually supporting and each positively necessary to the other.

The administration should be in a position to sell our industry to the public, locally and nationally by means of association advertising. The Portland Cement Association has reaped huge benefits in this way. The California Fruit Growers' Exchange has done likewise. The Automobile Chamber of Commerce and the West Coast Lumber Bureau have performed miracles by this means. A list of illustrations as long as your arm of the value of group or association advertising can be added. The most conspicuous instances of successful joint advertising ventures are to be found among those industries in which small scale production is the general rule. The public is capable of being educated as to the differences between good, bad and indifferent construction and installation and its relation to safety and to the fire hazard.

Competition

No gathering of electragists, large or small, ever thinks of committing the social error of dispersing without at least one sarcastic observation about competition. The words fierce, terrible, killing, deathly and hellish are made to work overtime. Now in this fierce competition, the sentiments regarding it are paradoxical to a degree that is hardly short of astonishing. Nearly everybody is half the time crying out against competition and the other half demanding it. Working men trying to suppress it in labor, and to enforce it in trade and commerce; on the other hand, the leaders in the industrial world are trying to secure it in labor, and to get rid of it in commerce; while the leaders of the regulative or political world are trying their best to maintain it in commerce, and are comparatively indifferent to it in labor. Our association as a whole is a fair cross-section in this respect of the whole body politic. It must be our job, through research and team work, to reconcile these divergent points of view, pull together for a common objective, strengthen our team work and show that at least we sense our problem.

Although competition is not all bad, neither is it all good; it is a natural phenomenon; it exists throughout all nature, but just as plants need to be cultivated by the weeding out process, so in competition, care must be taken to regulate it, so that each unit in competition gets its necessary sun, soil, water and air. Competition left to itself is like a tropical forest, strewn with the wrecks of trees and plants, that have had no chance at a fair supply of sun, space and air. The law "each for himself and the devil take the hindmost" is the law of the jungle, not a law of civilized commerce; the world has been at work, civilizing commerce, for hundreds of years, business has been evolving; why should it stop now? Of course, it will not stop. Why not,

there, give it a little conscious direction? Why not apply to business evolution a little of that intellectual power with which we all think we are so abundantly supplied? The future of your business is largely in your hands.

The theory that there is only a certain amount of business to be had and that therefore business getting is but a contest to see who can get the most of it is as disintegrating as the notion that there is only so much work available to wage earners and that the way to boost wages and prosperity is for workers to do as little as they can, in order not to exhaust the supply. Nominally the contractor holds himself in readiness to compete for work when it is on the horizon, but the idea of planfully creating a demand for his services is not a basic one in the industry. The idea of collective advertising is growing throughout the business world, but to a very small extent amongst contractors. This phase of our business promotion is a very fit subject for a bureau of research. We must find a way to shift the basis of competition away from price to service rendered to those who employ us. Service to the public, in the last analysis, is and will always be the economic foundation of our industry. It is up to us to see that the public is well served, both in quality and quantity. But this is not enough. The public must be told about it. It is not wise to assume that everybody knows about your business and what it does. Whence came the general knowledge? When did it come? The world is so full of a number of things that it behooves each member to justify his existence to the public that supports him. If people do not know how you get your living, they are suspicious of you—they are also suspicious of those businesses whose services they do not understand.

Within the life of a single generation, the industry can be made to undergo changes so profound, so revolutionary, so permanent, that it would almost appear as if human nature itself had been altered in the process.

Cooperation

(Continued from Page 22)

& Electric Company of Chicago, Ill.

Two unusually effective and enjoyable entertainment features were provided by the Chicago committee, for the evenings of Wednesday and Thursday. The first was a cabaret and entertainment called "A Spanish Night", which was held in the charmingly decorated ball room of the Stevens Hotel.

Spanish costumes were provided for all the guests, numbering over two thousand, making, with the bright decorations, the gaily colored balloons, and the lights, a brilliant scene of color. A number of cabaret features were provided on the Spanish note, and plenty of dance music for those who wanted to dance themselves. The cabaret committee included: Samuel R. Todd, chairman, C. E. Collier, Charles K. Cregier, William L. Geuder, C. W. Hartenfels, P. F. Hensel, Don A. Hill, Edward F. Meyers, B. J. Mockenhaupt, L. G. Mockenhaupt, J. M. Redell, and D. J. Underwood.

The annual banquet of the Association of Electragists was held on August 9, with a large number of electragists and guests in attendance. Leo E. Mayer, as toastmaster, introduced all the past presidents of the association who were present, including: E. McCleary, James B. Strong, G. M. Sanborn, Ernest Freeman, Robley S. Stearnes, Joseph A. Fowler, and the present president, Clyde L. Chamblin.

Earl E. Whitehorne, representing James H. McGraw, presented the McGraw contractor award for 1928 to N. J. Biddle, of Detroit, with the following citation:

"Nicholas J. Biddle, manager Association of Electragists, Detroit, while an electrical contractor was deeply interested in the financial difficulties which today beset this trade. He became convinced that the basic trouble rests in the carelessness with which credit is granted by the electrical jobber. By invoking the cooperation of credit men, local wholesalers, and contractors, he effected the establishment of a general credit policy whereby every contractor was put on a 30-day basis. The plan has now been in operation for two years. As a result the financial condition of the Detroit contractors is greatly improved, the number of irresponsible contractors has been reduced, the past due receivables on the books of the wholesalers has shrunk and the contracting trade is in a far more prosperous condition."

An honorable mention award was presented to Earl N. Peak, of Iowa, in recognition of his organization and cooperative work in his state.

Attention was drawn to the plan for which he was responsible by which members of the contractor and central station groups in Iowa settle difficult problems by conferences.

Harmony Contest

The annual singing contest for the harmony cup was won for the third time by the Lake County, Indiana, Electragists, upon decision of the committee of awards, consisting of the past presidents of the association who were at the banquet. By winning the third time the Lake County Electragists won permanent possession of the cup.

Second prize went to the electragists from Evanston, who received a large basket of flowers for their singing.

The banquet committee included: L. H. Lamont, chairman, Charles E. Brown, E. A. Compton, E. W. Donoho, A. H. Friend, Dana H. Howard, E. W. Kearns, A. E. Lubeck, O. L. Lynch, W. E. McCullough, Ralph Raymond, and J. J. Stanton.

The unusually large number of women attending the convention were provided with an interesting and complete program which kept them busy all day, while their men were in session. Golf at the Westward Ho Club was the program for Monday, while those not interested in that sport made a tour of the Hotel Stevens kitchens and attended a theatre party. There was a program of dancing and cards at night.

On Tuesday the ladies attended a breakfast and fashion show, followed by a shopping trip to the Loop.

Miss Alva Larson was chairman of the women's entertainment committee, with the following assistants: Mrs. A. L. Evans, Mrs. J. W. Collins, Mrs. P. Hensel, Mrs. James O. Kelso, Mrs. Allan C. Oltz, Mrs. W. E. McCullough, Miss Doris Tuerk, Miss Alma Vick, Miss Mary Ambrose, Miss Ruth Davis, Miss Valene Bardene, Mrs. Samuel A. Chase, Mrs. Leo E. Mayer, Miss Helen Norris, Mrs. William McGuineas, Mrs. J. M. Pierce, Mrs. Neal Thomson, Mrs. Florence Houghton, and Miss Elizabeth O'Kelly.

The Electragists have been trying for some time to convince power companies that their merchandising methods were short sighted and opposed to the very objectives they wished to reach. Finally, as a last resort, the A. E. I. went to an outstanding economist, a man with a background of public utility experience and known to be friendly to power companies generally, and asked him to make a brief study of the merchandising efforts of power companies and contractor-dealers. From his study he was asked to make whatever recommendations were in accordance with the best laws of business and economics. The A. E. I. position has been sustained. Read what Professor Cabot says!—The Editor

The Economic Relation of Central Stations and Contractor Dealers*

By PHILIP CABOT
Professor of Public Utility Management, Harvard University

IN many parts of the country there are smouldering disagreements between the electric light and power companies and the contractor-dealers in electric wiring and electrical appliances but it is not clear to the public whether these quarrels are between powerful competing groups which are likely to appeal to the arbitrament of war or whether it is merely a case where members of the same family are making faces at each other. If this is nothing but a domestic quarrel the customers will do well to look the other way, but if there is probability of real warfare the public is deeply concerned because war would retard and might temporarily stop the development of the domestic uses of electricity which has just got well under way and which is the most important immediate problem of the country in the electric power field.

The central stations have worked hard for many years to attach electric customers to their lines but that they have failed to develop the major uses of electricity in the home is shown by the fact that their customers only pay them about 8 cents a day on the average. There is evidence on every hand, however, that the leaders of the industry now recognize their responsibilities and are prepared to assume them and it would be little short of a national calamity if anything should now occur to check this advance.

The situation is made even more critical by the investigation of the electric power industry now in progress before the Federal Trade Commission because such reports as have been made public seem to indicate that it is animated by a spirit of hostility to the power companies and perhaps even by political motives, and serious damage to the progress of the industry may result unless the customers take the companies' side and express their conviction in some effective way that the companies are honestly trying to serve them well. It is important for the companies that their customers should adopt the motto said to have been displayed in a western dance-hall in the pioneering days: "Don't shoot the fiddler; he's doing the best he can."

The contractor-dealer is often a man of small capital compared with the central station and can not defend himself in competition if the choice of weapons is left to his adversary.

These are some of the reasons which have brought me here to address you.

I must begin by mapping clearly the field of industrial activity occupied by each party before attempting to give any answer to the problem. The business of the contractor-dealers has two departments,—house wiring and appliance sales,—and in both they compete in many districts with departments of the local utility companies as well as with each other and with other merchants. As the conditions in these branches differ considerably I shall deal with them separately, but I note in passing that in both the prosperity of the contractor-dealer is at the mercy of the power companies, and it is for this reason that he so quickly takes alarm.

The contractor-dealer is often a man of small capital compared with the central stations and cannot defend himself in competition if the choice of weapons is left to his adversary. And even if the central stations are scrupulously fair in this respect he may be seriously handicapped by unskillful rate making on the part of the utility companies. His business depends upon the rapid expansion of the domestic uses of electricity and if the prices charged for this service are above the value to the customer, or even very near it, as has often been the case, development is retarded and he is helpless.

The wiring business of the contractor-dealer consists in wiring all new houses and all old houses which are unwired, and also in bringing existing installations up to date. In the statement of Mr. W. C. Peet, read at the Electrical Industry Sales Conference on December 16, 1927, he seemed to intimate that while the number of wiring contractors was increasing, the market for house wiring was shrinking. If this was his opinion I cannot agree with it. The growth of the country is rapid, new domestic uses for electricity are being

*An address before the Twenty-eighth Annual Convention, Association of Electragists, International, Chicago, Ill., August 8, 1928.

found and I see no cause for alarm as to the future in the wiring field. The contractors are probably in a better position than the plumbers, and we have yet to learn that the plumber is headed for the poor-house.

But putting this fear aside the path of the wiring contractor is hard. His is a business in which a man can engage with very little capital and no overhead charges. Almost any skilled mechanic can soon learn the trade, his kit of tools is cheap, his shop is in his basement and the supervision of his work by the municipal authorities is often very casual. Competition in such a field is bound to be severe even if the mere fly-by-night tinker could be eliminated, and the responsible contractor needs all the help he can get to meet it.

The central stations should be his allies because their interests are identical and he has a right to complain if they side against him. Incredible as it may seem, they sometimes do. This, I think, is just a grievance which should be removed. The business of the central stations is to provide electric service of which they are granted a monopoly and when they depart from this field they should walk upright and with great caution.

Utilities Can Wire

But that they can legitimately enter the wiring field there is no doubt. Electric service cannot be supplied until houses are wired, and if wiring is badly done, or the cost of it is excessive, the business of the central station suffers. Against this injury to its business and to its customers it has a right, and a duty, to protect itself, but it must move with caution. In very small communities where there is no wiring contractor it may be the duty of the utility company to establish a wiring department and see to it that prospective customers are well served at fair prices.

But in the larger communities, which cover most of the field, such a policy can hardly be justified. It would be difficult and often impossible for the company to cover the whole field and it should not if it could. The customers will be better served by letting competition take its course. Independent contractors working in their own interest will provide a better service, resting upon a sounder economic basis, than the great, and sometimes cumbersome, organization of the central station.

The efficiency of the central stations in the wiring, merchandising and servicing fields is not high. Capable contractor-dealers can do this work at lower cost and give better service. The day of the small independent craftsman has not passed. In spite of the modern tendency to integrate some industries into large units there is high authority for the opinion that there is a better opportunity than ever before for the skillful man working for himself with low overhead costs and a compact organization under his own eye. Those who would solve the riddle of competition will do well to remember that the most efficient machine ever devised is an honest man, and the small organization of the local contractor can closely approach it. He can establish and maintain an intimate personal relation to his group of customers which the central station whose customers are legion cannot match. Men like to do business with their friends and for their friends. This is a relation to be cultivated in the interest of sound national development.

We appear to be entering upon another cycle of industrial combinations such as took place twenty years ago and if it runs true to form the pendelum will swing so far in this direction that the public will take alarm and the public utility companies which already lie under the stigma of monopoly should do everything in their power to mitigate rather than to stimulate this tendency.

For the central stations to undertake wiring contracts billed to the customer at less than cost for the purpose of rapid development is a short-sighted policy which in the long run will do more harm than good. This, like most other cases of bad business ethics, is due to placing too high a value upon an immediate profit. Where the life of an industry is infinite the management must always take the long time view, and never imitate the fly-by-night who grasps the quick profit. The sound policy, and in my opinion the only policy for the central station which can stand the test of time and public criticism, is to keep out of the wiring field as much as possible and to give its help to all honest and capable contractors.

The business of central stations is to provide electric service of which they are granted a monopoly and when they depart from this field they should walk upright and with great caution.

But the central station cannot quit the field; it has a duty to perform. It must see to it that its customers are well served and such service is impossible if wiring is too expensive or is badly done. When wiring is made expensive by unwise municipal ordinances or state laws it must unite with its customers and with the contractors to get them changed. It must cooperate with builders and architects to see that the wiring of new houses is properly designed, and by hunting up new prospects and stimulating customer interest it must do what it can to build up the business of those contractors who deserve it and help to stamp out unscrupulous competition.

Specifications

Occasionally it may be necessary for the central station to direct and co-ordinate the work of the contractors by drawing up standard specifications for certain types of work and establishing fair unit prices by competition, but this is a method that should be used with caution and always with a view to building up the future business of the contractors. The utility companies will do well to remember that their business is to sell electricity and that their attention should be primarily directed to the skillful pricing and advertising of their own goods, because a rapid increase in the demand for electric service will do more to bring down the cost of wiring by keeping the contractors busy than a resort to price cutting. When business is slack costs are high because overhead is high. Good pricing and good selling of their own services by the central stations and friendly cooperation with contractors is their whole duty in the wiring field.

Nothing could be more short-sighted than to try to bring house wiring within the scope of their monopoly and to use their power either by under bidding the contractor or by depreciating the quality of their work so as to weaken them or drive them from the field will do the utility companies great damage and in the long run will fail. At the present time they need all the friends that they can get; to make enemies is folly. The power of the companies should be used to protect

and support all capable contractors in their territory and to discourage cut-throat competition so far as possible.

The problem in the field of appliance sales is similar but not the same. The nature of the competitive situation is more complex and the dangers to the utility companies of a false step is greater. There are more than 200,000 retail outlets for electrical appliances in the United States of which the contractor-dealers are said to operate about 14,000 and the central stations about 4,000 so that unlike electric wiring this is not a problem in which the contractor-dealers and the central stations are dominant, although as the business originates with, and is dependent upon, the central stations they can do more than any other group to promote and foster sound development. The wiring field might in theory be occupied by the central stations to the exclusion of all others; they might extend their service from the meter, where their responsibility now ends, to the outlet where the service is actually delivered, although I believe that, for the above reasons such a policy is economically unsound.

Small Outlets

But in the appliance field this is probably impossible and certainly unwise. Most of the appliances sold are articles of convenience but not of necessity, and in such a market it is well known that volume of sales is best achieved through the maximum number of small outlets. Those central stations, therefore, which attempt to monopolize the appliance field are acting against their own interest. Their policy should be to develop the largest number of well managed outlets for selling appliances of high quality. Their most important interest in this field is to maintain the standard of quality. This seems too obvious to need demonstration and yet the contractor-dealers and other retailers complain that some central stations do not follow this policy, and the facts, I think, will bear them out.

The ways in which some central stations depart from sound business policy may be grouped as follows:

(1) Price cutting—either direct or by the use of premiums.

(2) Instalment sales covering an excessive period.

(3) Unfair selling methods of salesmen paid on a commission basis.

After a careful study of the evidence, I conclude that there are many cases where central stations have used their position in these ways to the injury of other retailers, and I believe to their own injury in the long run. It seems clear to me that the position of the central station in the retail merchandising field is only temporary and that their aim should be to get out of it as soon as practicable. It is only a related or secondary activity in which they are not highly skilled while they are surrounded by other merchants who are. My own experience of the appliance sales departments of utility companies has convinced me that they are generally inferior to the best retail merchants in this and other lines. And yet they possess advantages which give them the power to injure the business of others with whom they compete.

Some central stations depart from sound business policy by:
1—Price cutting
2—Instalment sales covering excessive period
3—Unfair selling methods of salesmen.

(1) They have abundant capital as compared with the contractor-dealer and as they make their profit out of the sale of their service, and not out of the sale of the appliance, they can, and do, sell them at prices which are ruinous to other dealers. This, I think, is bad business because it tends to kill off the very men whom they must later rely or to drive them into selling inferior goods. Such a policy is commonly dictated by the urgent necessity of building up new business on an under-developed property bought at a high price. The price may not have been excessive, if time be granted for development, but to push appliance sales at cut prices and charge the loss to development expense seem to me wrong. Precisely on account of its position, and its power, the central station should be most scrupulous to maintain fair prices at which all honest and efficient competitors can make a living. Other merchants have learned that to cut prices below this point is a false principle. It tends to reduce the confidence of the customer in the goods because he suspects that they were formerly priced too high, and in the merchant because it classes him with the bankrupt and the fly-by-night.

There may be special cases in introducing heavy duty appliances of long life when a low initial price may be justified, but if it is, the utility should shoulder the loss by making a wholesale purchase from the manufacturer and reselling to other retailers at a price which will protect their profit.

(2) The practice of making instalment sales from their own stores upon excessively long credit is another questionable practice into which the central stations fall. On account of their large capital the utilities can do their own banking, if they choose, on a speculative basis and take a loss, but other dealers must follow the banks and can only offer to their customers such terms as the banks will sanction by accepting the customers' paper for rediscount. If the utility is justified in offering better terms it must accept the paper of the dealers' customer as well as the paper of its own.

Commission Sales

(3) Perhaps the most irritating and insidious form of unfair competition comes from solicitors of utility companies who are paid largely on a commission basis. Even when forbidden to cut the price these men, in their eagerness to make a sale often exalt the power and responsibility of their employer and run down the goods or the service of the retailer to his detriment. In other retail trades where all competitors are relatively equal such methods have been abandoned because they back-fire. No good salesman for an investment banker will say a word against the securities of a rival; he has found it doesn't pay. But because of the peculiar position of the central station, protected by its monopoly and not dependent on the profit of the wiring or appliance sale, such methods are often used by salesmen and countenanced by salesmanagers. This seems to me a dangerous practice which should be abandoned but which is likely to continue so long as human nature remains unchanged, and the salesmen of the central station are paid in proportion to their own sales. I think the practice should be discontinued.

It makes little difference to the utility who makes the sale, provided the appliance is sold, and the hearty cooperation of other dealers is worth far

more than the probable immediate loss involved in a direct sale. If as some of the central stations contend, their appliance sales department must be conducted at a loss, then eagerness to increase their losses by increasing their sales is hardly justified. Why not let those do the business who can do it at a profit?

Complaints Justified

These are the principal forms of unfair competition of which the dealers complain and their complaints appear to me to be justified.

Your association is composed of the leading contractor-dealers of the country, and the more important central stations are grouped in a similar way through the National Electric Light Association. Now the most striking fact about this controversy is that both these associations seem to be in complete accord as to the proper principles of selling wiring and electric appliances. No one who will read the remarks of Sidney Z. Mitchell at the 49th convention of the National Electric Light Association, printed in the N. E. L. A. Bulletin in March 1927, the article by Howard T. Sands in THE ELECTRAGIST of September 1927, the "Report on Trade Practices in Central Station Merchandising", October 1927, and the "Report on Selling Additional Wiring", March 1928, can doubt where the National Electric Light Association stands, and yet both associations complain that the members of the other often violate the principles to which their associations are committed. This is true and will continue to be true, and neither association can prevent it because in the last analysis neither can control the conduct of its members. This is as it should be; nothing else would be legal for if they could, and did control, the conduct of their members they would be combinations in restraint of trade. If the situation which now exists, and which is deplorable, is to be remedied it must be approached from another angle.

Lest anyone should suppose that the disagreements are trivial and that there is nothing to remedy I quote the following from the printed remarks of a very prominent manager: "To put these appliances on our line quickly, economically, and as expeditiously as possible, the deferred payment plan should be used; long terms of one, two, or even three years might be considered. . . . Throw away the opinion that public utility appliance merchandising can be done at a profit. . . . Charge the selling cost into the cost of production." These propositions are capable of being construed in a way which would be unobjectionable to the contractor-dealers. The long credits advocated in the first sentence if made available to all dealers might be justified and the merchandising loss foreshadowed in the second sentence if taken by the central station on the wholesale price (the profit of other retailers being duly protected), would be a matter of interest only to the manufacturer and the utility. But unfortunately this has not been done, and the business of the contractor-dealers has been injured . Such a policy can only end in the destruction of other outlets or in open war and the result in either case will be great damage to the whole electric industry.

Contractors Cut Prices

It would be easy to quote many examples of unfair competitive methods used by solicitors of the central stations and equally easy to prove that the methods employed by many contractor-dealers are just as bad. Cut prices on goods of poor quality, and cut prices on wiring jobs skimpted to show a profit are common enough as they are in all trades. The fact is that the men in this business are like other men,—good, bad and indifferent. The problem which confronts you is to raise the standards of an industry but this cannot be accomplished through the efforts of these two associations; they have perhaps done all they can. The problem is really local and must be locally attacked. The initiative should be taken by the central stations. Local electrical leagues should be organized and fostered and every effort made to bring the local parties together. If you want to quarrel with a man stand off and write him letters; if you want to understand him, sit down with him in conference.

Broadly speaking, the higher executives of most of the utility companies hold sound views but their subordinates —salesmanagers and solicitors—who are held responsible for results and are paid on a commission basis often cut corners. Can you blame them? The taxi driver who cuts corners and rips off a mudguard is the symbol of men in all walks of American business life. Much of the trouble originates with the method of payment. This should be revised so that the solicitors and salesmanagers of the central stations cannot profit at a competitor's expense.

There are many schemes for cooperation between the central stations and the contractor-dealers in different parts of the country. Probably there is no plan which would work well everywhere, and certainly there is no plan that will work anywhere without the right man to run it. But the "Through the Dealer" merchandising plan developed by the Valley Electrical Supply Company of Fresno, California, a subsidiary of the San Joaquin Light and Power Company is certainly headed in the right direction. You are all familiar with it so that description is unnecessary, but considering the short time it has been in operation the results are extraordinary.

You hoped that I should offer some powerful weapon which you could take in hand and put an end to the conditions which distress you, and I have failed. But have I? I admit that human nature is defective and that so long as it remains so we shall live in a world of trouble. That is what we are here for. If things would run themselves you would not be paid to run them. But the situation is not desperate; in fact, it is most hopeful. The two associations are in substantial agreement as to the end to be sought; you have come to an understanding about what methods should be used. Your problem is to enforce your views. This must be done locally by patient effort and so far as executive officers of most companies are concerned they are on your side.

Publicity

Occasionally you will find a man, or an organization, opposed to you, but in such cases you have at your hand a weapon of great power,—publicity. Men fear isolation and flee from it. If it be true, as I believe it is, that the great majority of the electric public utility companies are on your side and agree with you on what constitute sound methods of merchandising, you can bring the pressure of publicity to bear upon your isolated opponent, and when he begins to feel his isolation he will come to terms. So long as your two associations continue to stand for sound economic principles, and so long as you pursue conciliatory methods with faith and patience, each year will show progress towards your goal.

Better Business Through Better Credit Policies*

Explanation of the Detroit Plan of Electrical Credit and Comments on Its Success and Legality

By FREDERIC P. VOSE
Secretary, National Electrical Credit Association

THE way to better business is through better teamwork between electrical supply wholesalers and electragists. This is being given interesting tests in several centers, notably by the Detroit Branch of Electragists cooperating with electrical wholesalers.

The plan in brief:

a—Goods purchased must be paid for with no bank balances, by the 10th of the following month in order to take advantage of cash discount.

b—Shipments are net thirty days. If not paid for in full by then all further shipments to be C. O. D.

c—First of each month jobbers report all their delinquent accounts which are compiled in a master list for the guidance of each cooperating jobber.

d—A committee of three passes on all applications for extension of time and supervises the operation of concerns receiving special consideration and accommodation.

The experiment was begun August 1, 1926. On that date there were some 850 licensed electrical contractors in Detroit. By the end of March this year their number had been reduced to 481.

A year ago the past due receivables of Detroit jobbers stood at $207,000. Seven months later, March this year, the past due receivables had been reduced to $73,000.

Detroit jobbers report that present trade conditions are greatly improved. Contractors have become better collectors, enabling them to respect credit terms. Pyramiding of accounts no longer possible. Notes are not accepted in payment. Past due receivables reduced 50 percent or better. Unfair trade practices and irresponsible competition practically ceased. Before the plan became effective neither jobber nor contractor had respect for terms of settlement. Both have become better business men. More friendly relations between contractors and jobbers.

One jobber claims the plan is not working 100 percent. He adds it cannot be made to work 100 percent until the undesirable element is kept out of the business and the desirable element is kept in the game making them stronger.

What human agency does yield continuously 100 percent results? Who is the jobber, or contractor, who is 100 percent efficient and successful, all the time? At the same time, the apparent attitude of the jobber quoted is one which may well be considered.

The Detroit plan has been objected to as being of doubtful legal soundness. The above quoted expression points a possible embarrassing, if not hazardous, position for one of the cooperators to take.

There is danger, too, in placing a contractor on the cash list for an alleged past due account, in the event that the claim in law and in fact could not be proven to be legally past due and owing.

It is evident that so long as the agreements are made and carried out within the confines of a single state, neither the Federal Trade Commission is interested, nor does the Sherman Act apply.

The state statutes and case law should be carefully briefed and the group should be counseled as to the respective rights and liabilities of the parties of interest and of the public at large.

As a general principle it may be stated that the law is in a state of flux, or evolution, with respect to giving recognition to the right of business to seek to eliminate wasteful, inefficient, unintelligent and unsound practices.

Others have declared that the Detroit and kindred plans are fundamentally unsound and improper in trade principle. Such assert the plan has not and never can approach 100 percent perfection of operation.

The fixed policy of leading jobbers is to cooperate with other electrical jobbers in a confidential interchange of credit facts as they appear from books of account, files and records. But such jobbers will not enter into any agreement as to what action they, or the other jobbers should take after the credit information has been interchanged.

This policy is in line with the Maple Flooring Association Case, 268 U. S. 563 which provides that no penalty may be properly provided to compel a member to submit to the concerted action of the group, but each should be left free and uncontrolled to exercise his individual discretion in all matters entering into trade.

Another element of possible weakness has already been observed. There is a tendency on the part of some local jobbers to regard the plan a cure all.

No city or section of the country may smugly say that its knowledge of trade and credit conditions is all sufficient. If a delinquent debtor has worked his limit in his local section, he next turns to distant markets where his record is unknown. His nerve and desperation constitute a trade menace.

A premium is placed on business incompetency if its debts and delinquencies are not promptly published in order to avoid preventable losses throughout the industry and all its branches.

In the present period of diminishing net, the trade should unite in self protection against the unbusinesslike and inefficient, the improvident, incompetent and incapable who unintentionally make losses just as surely as the commercial crook and the business plunderers do. These should not be permitted to play other sections without due notice.

Hence it should be regarded as sound credit policy for jobbers to interchange for the mutual protection of the local group the names of slow and unsatisfactory customers.

*Part of an address before the Twenty-eighth Annual Convention, Association of Electragists, International, August 9, 1928.

The author of this article, John F. Gilchrist, is one of the outstanding central station executives of the country. He is in intimate contact with the problems of the electrical industry and his views on the ills of the contracting business and their cure will be interesting to every reader of The Electragist.—The Editor

What Is Wrong with the Contracting Business?*

By JOHN F. GILCHRIST
Vice President, Commonwealth Edison Co., Chicago, Ill.

IF any one of the four divisions of the industry is not enjoying the prosperity which is necessary to its proper functioning and its healthy growth and development, those divisions which are prospering will not continue to prosper indefinitely, and it is the job of the entire industry and particularly the job of those who have the means to do so to see that plans are worked out so that all will prosper alike.

Taking over the work of other divisions, although it may be temporarily necessary in order that there shall be no slackening of output and that the public crying for service may be served, will not result in a permanent cure, and unless prompt consideration is given, will ultimately make the matter worse. What should be done is for each division of the industry, in cooperation with the other, to determine what are the functions of the different divisions, and then see that the whole structure is so balanced that each may be in a position to perform its full function with satisfaction to the public and credit and profit to itself.

All those who have given any thought to the position of the electrical contractors in this country realize that the bane of the business and the thing that is interfering with the public getting the service it should is the fact that it is too easy for the man with inadequate capital to get into the business. The business is flooded with a lot of small people who are so inexperienced and so illy equipped that they have no chance whatever of making a success for themselves, and they are obstructing the growth of those who would otherwise, if reasonably and properly compensated, perform their task and do a good job for the industry.

John F. Gilchrist

And who is the greatest sufferer? The great mass of the public who are being deprived of the advantages of electricity, because it is such a struggle on the part of the legitimate contractors to make a fair living out of the work they can get under the conditions of ruinous competition which prevail, that no time or strength of financial resource is left to promote the business in a large way by going after it through advertising and sales methods calculated to inform the public as to what electricity will do for them and create a desire to participate in these benefits.

The industry is cursed with too many poor generals and too few good privates, and any honorable measures, however drastic, which may be employed to control this situation will be justified, not only by the advantages which will accrue to the public, but by the advantages which will accrue to the very men who at the present time are responsible for the chaotic conditions. In all the human activities we recognize the advantages of organization. When it comes to fighting a world war, we never say that, as this is a free country, every man has a right to go out and serve as his own judgment dictates, and that any steps to control the situation are intolerant and un-American. On the contrary, we organize in the most drastic way, placing ourselves under the domination of those who know the game, and regulations and orders are carried out with military discipline.

If, instead of sending to Europe that great army of our young men who went "over there" ten years ago properly trained and coordinated under one control, we had sent a thousand independent armies, each allowed to arrange all its own affairs and fight in the way its little leader saw fit, we would never have done the job, and to thinking people any such suggestion seems foolish beyond description, but when a branch of a great industry undertakes to do a job of giving service of a particular kind to a great mass, we adopt the thousand-army principle. The resulting chaos is such that the ablest are unable to carry on with as much service

*Part of a paper presented at the Twenty-eighth Annual Convention of the Association of Electragists, Chicago, Ill., August 8, 1928.

to the public and proper compensation to themselves as is desirable for the public good.

In this industry, gentlemen, we have made a fair start toward organization; we have an association in every major branch and some of the minor branches of the industry, your Association, the National Electric Light Association, the National Electric Manufacturers' Association and the National Wholesalers' Association. Then the Society for Electrical Development, with representatives from all these associations, ties them together and forms a vehicle for cooperative work, but to render the best of service these organizations must be perfected and must find legitimate ways for controlling everything which like the competition in your business, is a real menace to a proper service to the public. If any one of these branches of the industry fails to do its work, it not only suffers itself, but the other branches also suffer and find it necessary to find some way of doing the work which is not done by those who should do it.

Where you find the manufacturer getting over into the wholesaler's field or the central station getting into the contractor-dealer's field, it is because those in the field have not done the job. True, it is quite as likely to be the fault of the manufacturer and the central station as it is that of the wholesaler or the contractor-dealer, because, in the first place, there has not been close enough working so that each understood the view, the position and the problems of the other, and more particularly one division has not realized the extent to which it was interested in the welfare of the other divisions. They have not taken pains to study the setups in the different divisions to know whether conditions prevailing were conducive to a full functioning of a given division.

Ruinous Competition

To illustrate my point, in my judgment, what would do more to assist all branches of the business than to have here from one hundred to two hundred, no more, able, resourceful, high-grade contractor-dealers, and it would be for the best interests of the public. Therefore, any decent steps which could be taken to prevent the ruinous competition of the small fly-by-night contractor would be justified; justified, because the public would be better off and because every one in the industry would be better off; justified, because such a situation would result in an increase of business and an increase of opportunity to serve the public, which would require more people than are now in the industry under the present unsatisfactory condition, and while three or four hundred or thereabouts would not be working for themselves in their own private businesses, they would be much better off, and the public they serve would be infinitely better off if they were working as a part of a smaller number of much larger and more responsible units.

Stabilization

To the extent that some of these small people are doing work below cost, there might be a limited number of people who are getting their work done for less than they should get it, but on the other hand, if it were possible to organize the industry as I have outlined and so that there would be a limited number of firms who knew how to do business, who knew how to secure work; who had capital and credit sufficient for the needs of their business and who appreciated their responsibility to the public and the industry, the result would be that the contracting business would be stabilized. It would make the money which responsible men who render service in any form of the business are fairly entitled to make; it would attract the highest grade of employes; it would accumulate capital which would enable each institution to go out vigorously for new business to an extent not at the present time even dreamed of by the great majority of the people in the contracting end of the business, and the result would be that literally millions of people would enjoy the benefits of electricity which they do not now enjoy, with the consequent improvement in their lives and standards of living, and I believe that you will concede that such a situation and such a development would bring with it economies in methods of manufacture and in methods of doing work so that, while those that actually did the work would be better off than now, so much more would be accomplished with the order and resources and volume which would then prevail that the cost of the unit of work to the purchaser would be lower than it is under the present conditions.

The field is enormous. Forgetting entirely the possibilities of increased electrical requirements in the new buildings, take first the homes of Chicago alone. There are approximately 800,000 of them using electric service at the present time. I think it is a fair statement to say that on the average they have not one-half of the electrical wiring that they should have, if properly wired by 1928 standards. There is probably $50,000,000 worth of work of this kind alone required in the homes of Chicago, and we are not through with standards. They are increasing continuously and will go on, so that in fifteen or twenty years from now premises wired under today's standards will appear as inadequately equipped as the average existing installation does to us today, and that point is just where business for the rest of the industry starts—the manufacture and sale of appliances; the manufacture and sale of machinery and material for plant capacity and the generation and sale of electricity, and the best part of it is that it is all in the rendering of a service which becomes a real economy to the user, enables him and his family to live better without any higher cost and to be in a position to earn a better living. And what does the cost of all this to the consumer amount to? At the present time we in this industry get perhaps three or four cents of the consumer's dollar, and I challenge anyone to say that he does not get as good value or as wholesome value for that three or four cents as for any other money he spends.

This raises the question as to why we should not get another cent or two of the customer's dollar and give him similarly good value for it.

Industry Competition

Other industries are going out vigorously for consumer-attention and to sell their products—industries where it is much more difficult than in ours to stir the user's imagination and get him interested in their products. The institutions which sell lumber, plumbing equipment, roofing materials, new inventions for partitions and insulation in buildings, paints, fences, farm implements and literally thousands of things which, in the estimation of the average man, have only a remote interest in his life, are spending millions, perhaps hundreds of millions, in publicity and advertising, are accomplishing their purpose and are building up businesses which justify this advertising, while we in our industry, with a commodity which enters to a greater or lesser ex-

tent into the intimate life of every human being and which has a romance and interest about it to attract the attention of the most lethargic, are doing little or nothing to inform the public as to the very great advantages which it will secure from a much more general use of electric appliances which cannot be used unless premises are more liberally equipped than they are at the present time.

Practically all of this development, however, means a class of business which will come by adding to the equipment in premises already wired; in other words, additional outlets, a class of business which we, too often in our ignorance, are inclined to sneer at, and at best decline as offering no opportunity for profitable business. My answer to that is, if it is time, let us get it on the basis that we are doing it at the present time, let us get it on a basis where it will be. The people want the service; in fact, their lives, and consequently their livings, will be greatly benefited, even though many at the present time, because of our modesty, do not know it. We will get into this business whether we wish to or not.

Rewiring

Nearly all of the existing buildings in the cities and towns are already equipped electrically. This was not so only a few years ago. In 1924 we reached the peak of building wiring, so far as the number of unwired buildings equipped in a year was concerned. In that year there were 1,700,000 buildings wired. Each year has seen fewer buildings wired, until this year there are considerably less than 1,000,000 being wired. The reason of this is, we have nearly reached the end of supply of buildings which have been erected for some years but have never had any electrical wiring in them, and we will reach the point during the next few years where the field, from the standpoint of buildings which have never had any wiring will disappear because they are all wired, and our new business will be limited to the new buildings erected each year, which at the present time is estimated to be about 300,000 for the entire country, or only about one-sixth as many buildings as were wired in 1924. There is the answer, gentlemen. We will either develop this installing of additional outlets into a business or many will go out of business.

However, there is no need of going out of business when the average premises, as I have already indicated, are provided with considerably less than one-half of the electrical equipment which they should have. The wise contractors are studying the problem and are intent in finding the way to go after this business and make it one of great advantage to the public and profit to themselves.

New Electrical Code

(Continued from Page 26)

will tend not only to produce a safe installation, but will remove the uncertainties which previously existed.

The tendency to provide bigger and better installations of electrical equipment is reflected in the new rule which requires the service wire to be at least No. 8. Just a few years ago No. 14 wire was permitted for service. The 1923 Code increased this to No. 10 and the Code now makes it No. 8.

The Electrical Committee, in its revision of the National Electrical Code, is endeavoring to continue the development so successfully carried out in past years, but with the ever broadening field of its influence, and with the constantly increasing group of interests affected by its provisions, this duty is becoming more involved and more important.

Each and every branch of the industry has its influence on the Code. New subjects are introduced into the Code to bring it up to date and in line with the latest practice. Subjects are treated in more detail and the detail of each subject has more careful study and broader consideration, not only by the Electrical Committee, but by elements of the electrical industry interested in the subject, but entirely remote from the committee itself.

A strong effort is being made to make the Code rules more concise and more clear, to remove conflicts and obsolete requirements and provide more logical and orderly arrangement.

Many features of an engineering nature, which tend to standardize and lighten the work of the contractor, are finding their way into Code rules, but while these features are engineering in character, they are primarily based on safety requirements.

The general use of the Code, as a basis for legislation, makes it mandatory that rules be so worded as to permit of their adoption by legal procedure.

By the introduction in the Code of stipulations as to when and where certain methods of wiring may be used, the necessity for varying from the Code is reduced.

All of these tendencies of the Code serve to make the Code more applicable, and to reduce, as far as possible, the necessity or excuse for any variations in the Code, or in the application of the Code.

The National Electrical Code has arrived at that station in electrical affairs where it is in reality a national institution. It has advanced materially from its first position as a Fire Code, and is now to all intents and purposes, a national electrical safety code, providing for these requirements that have to do with the protection of life as well as the protection of property. The National Electrical Code is the installation standard of the whole electrical industry and for the whole country and in that process of evolution through which the Code is now going, nothing is more important and as far reaching as the endeavor to so devise the Code that it may truly and fairly represent every interest involved and that it may be in such form as to be accepted universally and without any change by every part of the country from the smallest village to the largest of our metropolitan centers. This is the ideal towards which the Code is aimed and to which it is fast approaching.

Trade Relations

(Continued from Page 27)

The central stations have become prosperous and powerful and in large measure due to the aid given them by the manufacturer, jobber and contractor. Every electrical device made by the manufacturer, distributed by jobber, sold and installed by the contractor brings revenue to the central station and while the manufacturer, jobber and contractor receive for their service just one profit each, the central station derives a profit from this device over a long period of time. The years just ahead will prove an opportune time for the central stations to aid all other industry groups to travel the road to success.

Manufacturers Exhibition

Leading Manufacturers of Electrical Supplies and Equipment Display Products at Electragist Convention

THE manufacturers' exhibits at the 1928 electragist convention were beyond a doubt better, on the whole, than those of any previous year. The space alloted for exhibits was completely taken by the forty-one manufacturers whose products were on display.

One of the noticeable features of this year's display was the number of products shown in action.

A popular exhibit was Televox, the mechanical man of the Westinghouse Electric and Manufacturing Company, who performed stunts for the electragists upon the command of his master, whistled through a telephone. The Westinghouse Company also displayed an electric fountain in the modernistic manner, with an ever-changing flood of colored light.

The members of the exhibition committee, J. C. McQuiston, A. L. Atkinson, Samuel A. Chase, A. S. Merrill, T. W. Merrill, Martin A. Oberlander, and A. E. Tregenza, are deserving of the highest praise for the character and educational value of the 1928 exhibit.

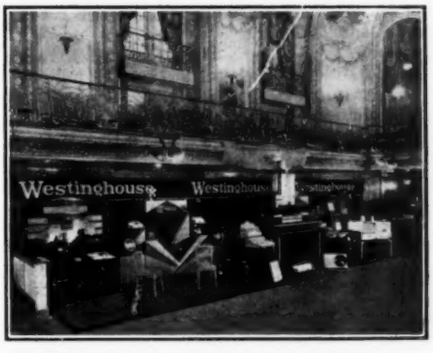
The manufacturers who had booths at the convention were as follows:

Frank Adam Electric Co.
All-Steel Equip. Co.
The American Electric Switch Corp.
American Steel & Wire Co.
Appleton Electric Co.
Automatic Electric, Inc.
Benjamin Electric Mfg. Co.
Gus Berthold Electric Co.
The Black & Decker Mfg. Co.
The Bryant Electric Co.
Bulldog Electric Products Co.
Bussman Mfg. Co.
Century Electric Co.
Chicago, Jefferson Fuse & Electric Co.
Chicago Steel Tank Co.
Clayton Mark & Co.
Clemson Bros., Inc.
S. H. Couch Co.
Crouse-Hinds Co.
Curtis Lighting, Inc.
Edwards & Company, Inc.
Erie Malleable Iron Co.
French Battery Co.
Graybar Electric Co.
General Electric Co.
Harvey Hubbell, Inc.
Johns-Manville, Inc.
National Electric Products Corp.
The Okonite Co.
The Packard Electric Co.
Square D Co.
Taplet Mfg. Co.
Tork Clocks, Inc.
Triangle Conduit Co., Inc.
Triplex Washing Machine Corp.
The Trumbull Electric Mfg. Co.
Van Cleef Brothers
The Wadsworth Elec. Mfg. Co., Inc.
Westinghouse Electric & Mfg. Co.
The Wiremold Co.
William Wurdack Electric Mfg. Co.

Edwards & Co.

Wadsworth Elec. Mfg. Co.

Bryant Elec. Co.



Westinghouse Electric & Mfg. Co.

National Electric Products Co.

General Electric Co.

Analysis of 1928 Code--IV

This final chapter of the Code Analysis deals with radio equipment, signs, theatres, vacuum tube systems, and signal systems

Article 35. Motion Picture Projectors and Equipment

Section 3501. *General.*

Rules a, b and c are the same as in the 1925 edition.

Two new rules, d and e, are added, as follows:

d. All live parts shall be enclosed or otherwise guarded to prevent accidental contact of persons or objects.

e. All conduit, armored cable, metal raceways, exposed metal frames and enclosures of equipment shall be grounded as prescribed in article 9 of this Code. This shall apply to all devices except pendent and portable lamps operating at not more than 150 volts to ground.

Section 3502. *Projectors of Professional Type.*

Rules 3502-a, c, d and e are unchanged. Instead of old Rule b, requiring wires not smaller than No. 4, new Rule 3502-b reads:

b. Wires shall be of sufficient carrying capacity for the current rating of the projector used, but in no case shall wires smaller than No. 10 be employed to supply the projector outlet.

Rule 3502-f, specifying that the projector be of approved type, that permission be obtained for its use and that it be in charge of a competent operator, was included in the 1925 code, but was stricken out in the 1926 supplement.

Rule 3502-g is new:

g. Switches if used shall be of externally operable type.

Section 3503. *Enclosed for Projectors of Professional Type.*

Rules 3503-a to e, inclusive, are the same as old Rules a to e, except that the following new requirement is added to 3503-e:

Extra films shall be kept in individual metal boxes having tight-fitting covers and each booth shall be provided with an approved fireproof box for the storage of films not on the projection machine.

Rule 3503-f calls for a motor-generator installed in the projector enclosure to be protected in the same manner as specified for motors or generators in Class III, Hazardous Location.

Section 3504. *Projectors of Non-Professional Type.*

This section is identical with the old section, except that old Rule 3504-d is omitted. This related to enclosure of rheostats, transformers, switches, etc., which is now covered by 3501-d.

Article 36. Organs

Only one change has been made in this article.

Section 3605. *Fuses.*

The old rule required each of the control wires between the console and the organ to be protected by a fuse rated at not over 30 amps. The new rule changes the maximum fuse rating to 15 amps. and permits common return wires to be without fuse protection.

Article 37. Radio Equipment

Section 3701. *General.*

Rule 3701-a exempts from the requirements of this article antennas used for coupling carrier current to line conductors, as well as equipment on shipboard.

The following new rule, 3701-c, is added:

c. Methods of wiring from the source of power to and between devices, related to apparatus connected to interior wiring systems, shall be in accordance with the rules covering permanent or portable fixtures, devices and appliances.

It is recommended that the authority enforcing this Code be freely consulted as to the specific methods to be followed in any case of doubt relative to installation of antenna and counter-poise conductors and that the National Electrical Safety Code, Part 5, be followed.

Section 3702. *For Receiving Stations Only.*

Rules 3702-a, b, c, d and e are the same as the old rules, except for the following sentence in 3702-a:

a. Antenna and counterpoise conductor sizes shall be not less than No. 14 if of copper or No. 17 if of bronze or copper-clad steel.

The following part of 3702-f is new:

f. Lead-in conductors from the antenna to the first building attachment shall conform to the requirements for antennas similarly located. Lead-in conductors from the first building attachment to the building entrance shall, except as specified in the following paragraph, be installed and maintained so that they cannot swing closer to open supply conductors than the following distances

Supply wires 0 to 600 volts.....2 feet
Supply wires exceeding 600 volts.....10 feet

Where all conductors involved are supported so as to insure a permanent separation and the supply wires do not exceed 150 volts to ground, the clearance may be reduced to not less than 4 inches.

The requirements of old Rule 3702-f are retained, except that instead of the 4-inch separation from power wires, the new rule reads:

Lead-in conductors on the outside of buildings shall not come nearer than the clearances specified above, etc.

This sentence is added to 3702-g:

The lead-in conductor from the building entrance to the set shall have rubber insulation approved for voltages 0-600 (Type R).

3702-h is the same as before.

The note under old Rule 3702-i is omitted and the following sentence is added (referring to the antenna grounding switch).

The switch should be placed in the most direct line between the lead-in conductor and the point where the grounding connection is made.

Rule 3702-k on protective grounding includes the same requirements as the old rule of this number, except that the wording of the next to the last sentence, "other permissible grounds are grounded steel frames of buildings," etc., is changed to read:

If water pipes are not available ground connections may be made to a grounded steel frame of a building, etc.

The rule also includes this new provision:

An outlet pipe from a water tank fed from a street main or a well may be used, provided such outlet pipe is adequately bonded to the inlet pipe connected to the street water main or well.

The old rules, 3702-l, m and n are retained without change.

Old Rule 3702-o provided that storage battery leads should be rubber-covered and protected by 15 amp. fuses or circuit-breakers located "preferably" at or near the battery. The requirements now cover "B" batteries and are more specific. The new rule is as follows:

o. Storage-battery leads shall consist of conductors having approved rubber insulation. The circuit from a filament, "A" storage battery of more than 20 ampere-hours capacity, NEMA rating, shall be properly protected by a fuse or circuit-breaker rated at not more than 15 amperes. The circuit from a plate "B", storage-battery shall be properly protected by a fuse or circuit-breaker rated at not more than 1 ampere in the negative lead. Fuses or circuit-breakers shall be located not more than 18 inches along the wire from a battery terminal.

Section 3703. *For Transmitting Stations Only.*

3703-a is the same as the old Rules a and b. The following, 3703-b, is new:

b. Antenna conductor sizes shall not be less than given in the following table:

Material	Stations to which power supplied is less than 100 watts and where voltage of power is less than 400 volts	Stations to which power supplied is more than 100 watts or voltage of power is more than 400 volts
Soft copper 14		7
Medium-drawn copper 14		8
Hard-drawn copper 14		10
Bronze or copper-clad steel 14		12

Rules c, d, e and f are the same as the old rules so designated.

3703-g is the same as the old rule, except that a flexible grounding lead and clamp are permitted in place of a double-throw knife switch for connecting the antenna and counterpoise lead-ins to the grounding conductor.

The same change has been made in Rule 3703-h as in 3702-k, that is, other grounds may be used only where water pipes are not available, and an outlet pipe from a water tank may be used for grounding.

Except for the omission of Sub-Paragraph 3 in old Rule 3703-l, there are no changes in the remainder of this section.

Article 38. Signs and Outline Lighting

Section 3801. *General.*

The following new rule, 3801-b, is added:

b. Signs and outline lighting which employ vacuum or inert-gas tube systems shall, in addition to requirements of this article, comply with the provisions of section 5002 of this Code.

Section 3802. *Material.*

Rules a and b in this section are unchanged.

The wording of 3802-c is slightly changed to require the sign box or trough for outline lighting to be weatherproof only where located outdoors. A similar change is made in 3802-d, applying to cutout boxes and cabinets, also, in this rule, non-weatherproof transformers are not required to be enclosed in a box unless outside of buildings.

Section 3803. *Sockets and Receptacles.*

Rule 3803-a is not changed. 3803-b, as follows, is new:

b. Electric signs with changeable connections shall be so arranged that the connections can be changed manually only by approved connectors. Approved connectors shall interrupt all ungrounded conductors of the circuit.

Section 3804. *Wiring.*

There are no changes in Rules 3804-a, b, c and d. 3803-e is changed to include out-

line wiring, also metal troughs are included as approved enclosures for wire outside of sign structures. Conduit must be weatherproof where outside a building, and lead covered armored cable is required only where the cable is installed outside a building.

Rules 3804-f and g are the same as the old rules. Grounding is covered by a new rule, 3804-h:

h. Live parts shall be enclosed or otherwise guarded unless on grounded circuits of not more than 150 volts to ground, and safe from accidental contact by objects or persons.

Section 3805. *Open Wiring.*

Rule 3805-a now reads as follows, new wording being indicated by the italics:

a. Open work may be employed as the wiring method for outline lighting and for signs on *walls,* roofs or open ground, where not subject to mechanical injury, *and not readily accessible to unauthorized persons and if on grounded circuits of not more than* 150 *volts to ground.*

3805-b and c are not changed.

Section 3806. *Grounding.*

New wording here is indicated by italics.

a. *Signs,* troughs *and other metal frames* shall be grounded as provided in article 9 of this Code, *unless these are insulated from ground and from other conducting surfaces and are inaccessible to unauthorized persons.*

Section 3807. *Switches.*

This is a new section.

a. Switches controlling signs or outline wiring shall be externally operable.

b. Each sign shall be provided with a switch which will open all ungrounded wires supplying the sign. When signs are not within sight of the switch, the switch shall be of the locking type.

Article 39. Theaters, Including Motion Picture Houses

Very few changes have been made in this article.

Section 3901. *General.*

Grounding is covered specifically by a new rule, 3901-d, as follows:

d. Where conduit, armored-cable or metal-raceway construction is employed, all such conduit, metal sheath, raceways, all exposed metal frames and enclosures of equipment, including borders, shall be grounded as prescribed in article 9 of the Code. This shall apply to all devices, except portable arc lamp standards, portable strips, and similar portable devices containing no wire of an ungrounded circuit exposed to higher voltages.

A change of some importance here is the requirement that borders be grounded, instead of being insulated.

Section 3902. *Services.*

Where the supply can be obtained from two street mains, Rule 3902-a provides for "two or more" separate services, instead of calling for two. Where the old rule required one service for the emergency lights only and one service of sufficient capacity to supply the entire equipment of the theater, two alternative methods are now offered.

(1) One service to supply all emergency lights and one service to supply the normal demand of the theater equipment and sufficient lights to provide equivalent illumination to that of the emergency lights.

Or (2) the emergency lights may be suitably sub-divided between two or more of the services to enable emergency illumination to be maintained in case of interruption of one of the services.

Method (1) is the equivalent of that specified in the old edition. Method (2) will permit the emergency lights to be divided into two groups, each group to be connected through a double-throw switch to either one of two services, both of which supply other lights in addition to the emergency lighting.

Rule 3902-b is the same as old Rule b.

3902-c is a new rule:

c. Where a source of supply at less than 50 volts is employed for one or more lighting systems in the premises, the installation shall also comply with the appropriate provisions of article 40 of this Code.

Section 3903. *Auditorium.* No change.

Section 3904. *Stage.*

Rule 3904-b contains the following new sentence:

Switchboards having current-carrying parts exposed on back shall be elevated or guarded by suitable railings to prevent accidental contact of persons with live parts.

Old Rule 3904-i is omitted. This was the rule calling for strain insulators in steel cables used to suspend borders.

Rule 3904-i provides that "stage and gallery receptacles shall be in approved pockets or enclosures" instead of "—— pockets shall be of approved type," and shall be "protected by individual cutouts at," as well as controlled from, the stage switchboard. In the old rule it was specified that feeds for arc pockets and incandescent pockets should not be smaller than No. 6 and No. 12, respectively. The word "pockets" is now changed in each case to "receptacles." The old provision that feeds to pockets shall be of ample size, is stricken out, being now unnecessary with a separate circuit of specified size run to each receptacle.

Rules 3904-j and k are the same as old Rules 3904-k and l.

No changes have been made in the remainder of this article, consisting of Sections 3905 to 3913, inclusive.

Article 40. Isolated Plants. 0-50 Volts

Section 4001. *General.*

No change is noted in this section.

Section 4002. *Sockets and Receptacles.*

Rule 4002-a. Lamp sockets and receptacles shall be of the 660 watt classification instead of 250 volt classification, as formerly.

A new rule, 4002-b, is added:

b. Receptacles of 20 ampere rating shall be provided in kitchens, laundries and similar locations where appliances are likely to be used.

Section 4003. *Automatic Cutouts and Circuits.*

Rule 4003-a. The maximum size of branch circuit fuses is increased from 10 amp. to 20 amp., except that larger fuses may be used for special circuits of No. 10 wire supplying the 20 amp. receptacles specified in 4002-b. (S).

Rule 4003-b is the same as in the old edition.

Rule 4003-c, as follows, is new:

c. Wire size shall be not less than No. 12 for any circuits. For special circuits to which appliances or appliance receptacles are attached, as in paragraph b of section 4002 of this article, the wire size shall be not less than No. 10 for supplying more than one appliance or appliance outlet.

Section 4004. *Batteries.* No change.

Section 4005. *Grounding.* No change.

Article 50. Circuits and Equipment Operating at More Than 600 Volts Between Conductors

Section 5001. *Series Arc Lighting.*

The old Rule 5001-a, to the effect that constant-current systems shall not be installed in buildings now also includes provision that lamps or fixtures shall not be attached to exterior walls of buildings; all except by special permission.

The remainder of this section in the old edition, Rules b to h, inclusive, are stricken out as unnecessary, series arc circuits inside buildings being almost unknown today.

Section 5002. *Vacuum and Inert-Gas Tube Systems.*

Aside from two or three of the provisions of old Rule 5002-a, which have been incorporated in the new text, this is an entirely new section. The old section has become inadequate on account of the recent rapid development and greatly increased use of these systems. The section is reprinted here in full.

a. The tube shall be substantially supported and so installed as to be free from contact with inflammable material or grounded metal objects. It shall not be unduly exposed to mechanical injury. The tube terminals shall (1) project within the sign enclosure, or (2) shall be isolated from combustible material and inaccessible to unauthorized persons, or else (3) shall be installed in separate enclosures approved for the purpose which shall consist of non-combustible non-absorptive insulating material or of metal of thickness not less than No. 24 U. S. sheet metal gauge. Such sheet metal shall be galvanized, treated with at least three coats of anti-corrosive paint, or otherwise suitably protected from corrosion. Connections at electrodes shall be mechanically and electrically secured and, unless a solderless connector approved for the purpose is used, shall be soldered.

b. The transformers, tubes and other apparatus shall be approved for this use. High-voltage transformers of other than weatherproof type, and other high-voltage equipment shall be installed in approved cabinets unless placed within the metal enclosure provided for the complete assembly. The transformer secondary open-circuit voltage shall not exceed 15,000 volts.

c. High-voltage conductors shall be approved for the purpose and shall be not smaller than No. 14 B. & S. gauge. Outside of the cabinets and tube-terminal enclosures they shall be covered with insulation approved for the purpose. Where within reach from ground, roof or window, they shall be installed in metal conduit. Elsewhere, they shall be run in conduit or on approved insulators which maintain a separation of at least two inches from other objects.

d. Not more than one transformer shall be dependent upon a single automatic overload protective device unless the combined load is less than 1650 volt-amperes. Additional devices for the individual protection and disconnection of transformers in signs may be placed within or outside the sign structure. If exposed to the weather, they shall be of the weatherproof type.

e. Enclosures for transformers and regulating coils shall be well ventilated and of such design as to prevent the emission of any flame or sparks in case of burnout of any of the coils. All metal enclosures shall be permanently and effectively grounded in accordance with Article 9, except that a No. 14 wire may be used for bonding together isolated tube-terminal boxes or outline systems.

f. Enclosures for transformers, regulating coils and tube terminals shall, for indoor installations having live parts exposed within the cabinet, be arranged so that the door of the enclosure can not be opened without breaking the primary circuit.

Section 5003. *Wiring.*

The clause "and fire-resistive motor rooms" is added to the first sentence of old Rule 5003-a and a second sentence is added as follows:

Industrial substations for such voltages, if not outdoors or in a separate detached building, shall meet the requirements for a transformer vault in section 5007.

Rule 5003-b is the part of old Rule b requiring conduits to enter and be secured to shields, casings or terminal boxes of apparatus elsewhere than in special location. The part of the rule requiring the shields of casings and grounding of same, is omitted. The latter items are covered under other rules, therefore the old general provisions are no longer necessary.

Old Rule 5003-c is omitted and 5003-e is transferred to the section on service equipment.

Rule 5003-c is the same as old 5003-d, with an added sentence permitting the use of fiber conduit in lieu of grounded metal conduit to enclose underground service cables.

5003-d is the same as old Rule 5003-f.

Rule 5003-e is a revision of old Rule 5003-g for open work. The qualifying clause in the old rule "adjoining an outside wall where the wires entering the motor room are not in conduit," is omitted. The separation of open wires from the surface wired over is changed from 1 in. in all cases to at least 2 in. in all cases, and 3 in. where voltage exceeds 2500.

The two following rules, 5003-f and g, are new:

f. Overhead service conductors shall be not smaller than No. 6. They shall enter the building only in rigid conduit or as separate individual wires. Open wires shall enter through waterproof insulating tubes or bushings, with drip loops on the outside. Where rigid conduit is used, it shall have weatherproof threaded joints and be equipped with an approved service pothead.

g. Underground service conductors shall be not

smaller than No. 8, shall be lead-covered and if exceeding 2500 volts to ground shall terminate in suitable pot-heads or the equivalent located to conform with section 5010. The end of underground service conduit shall be sealed with suitable compound.

Section 5004. *Motors.*

The wording in the old rule "at a potential exceeding 2500 volts to ground" has been changed to "at more than 7500 volts between conductors."

Section 5005. *Transformers and Apparatus.*

This section is nearly the same as in the old edition, the only change being the transfer of the following two sentences from Rule d to Rule b.

This shall not apply to the control-circuit transformer furnished with control equipment. These transformers shall be considered as subject to the requirements applying to the equipments with which they are used.

Section 5006. *Control and Protective Equipment.*

Rule 5006-a is entirely new.

When operating at more than 600 volts, each motor, each transformer or bank of transformers operating as a unit, and each other operating unit of apparatus, shall be separately controllable and protected by a manually operable circuit-breaker which interrupts all ungrounded circuit wires, and which is automatically actuated by excessive overload in any ungrounded wire; and the number of over-current units shall be as specified in the table of sub-paragraph 6 of paragraph a, section 808, provided that certain transformers installed in fireproof vaults may be otherwise controlled and protected when and as permitted by section 5009 of this article. For the purposes of this rule, transformers operating in multiple shall not be considered as operating in bank and shall be separately protected. When a generator and a transformer, or bank of transformers, operate as a unit for stepping up or stepping down the voltage, they may be controlled and protected as an operating unit. Where the motor-starting device does not open all ungrounded leads to the motor, this circuit-breaker shall be installed in sight of the person operating the motor-starting device or else have provision for locking in the open position.

Rule 5006-b on oil circuit-breakers, corresponding to old Rule 5006-a, now reads "where connected to circuits exceeding 2500 volts to ground," instead of the old wording "when operated at a potential exceeding 7500 volts." In the same rule, the present requirement is enclosure in "separate fireproof cells or closed metal compartments," this formerly having been "separate fireproof cells or compartments." The purpose of the latter change is explained by the following fine print note:

Safety control truck panels and armor-clad switch-gear units on circuits not exceeding 15,000 volts are considered to comply with this rule even though the circuit-breaker is not of the remote-control type.

5006-c is a new rule:

c. Switches and control apparatus on circuits exceeding 2500 volts to ground shall be installed in a vault complying with section 5007, or in a fire-resistive switch room or motor room.

Safety control truck panels and armor-clad switchgear units are considered to comply with this rule.

5006-d is the same as old Rule 5006-b.

Section 5007. *Transformer Vaults.*

Old Rule 5007-a reads: "The enclosure shall consist of concrete," etc.; this is changed in the new rule to "the walls and also the roof shall consist of reinforced concrete" and this clause is inserted:

or of construction of equivalent ruggedness and equivalent fire rating as determined by tests conducted according to the Standard Fire Test Specification;

Rules 5007-b and c are old rules unchanged.

In Rule 5007-d the words "approved for Class A openings" as defined in the regulations of the National Board of Fire Underwriters, are inserted after "firedoor."

Section 5008. *Capacitors.*

No change has been made in this section, except to substitute the term "capacitor" for "static condenser."

TABLE 9—Services Entering Fireproof Transformer Vaults

Conditions	New Requirements	Old Requirements
4000 volts to 7500 volts between conductors. Not over 50 k. v. a. per phase	Automatic oil breakers or non-automatic oil switch and fuses.	Fuses and disconnectors.
4000 volts to 7500 volts between conductors. Over 50 k. v. a. per phase.	Automatic oil breaker.	Fuses and disconnectors.
Not over 4000 volts between conductors and not over 2300 volts to ground. Not over 50 k. v. a. per phase.	Automatic oil breaker or non-automatic switch and fuses or fuses only, or automatic air-break circuit breaker.	Fuses only.
Not over 4000 volts between conductors and not over 2300 volts to ground Over 50 k. v. a. per phase.	Automatic oil breaker.	Fuses and disconnectors.

Section 5009. *Service Equipment.*

The following explanatory note is new:

Secondary conductors and not primary conductors are regarded as constituting the service wires to the building proper in the following cases, and where any one of the conditions is satisfied only paragraphs (g), (h), (i) and (j) of this section apply.

(1) Where step-down transformers are located outdoors.
(2) Where step-down transformers are located in a separate building from the one served.
(3) Where step-down transformers are located in a transformer vault conforming to the requirements of section 5007 and under the sole control of the supply company.

Rule 5009-a reads as follows, with new wording in italics:

a. In services operating in excess of 600 volts, all ungrounded conductors *supplying equipment, except as noted below in paragraphs b and c,* shall be controlled and protected by an automatic circuit-breaker of suitable rupturing capacity *having an over-current device in each ungrounded conductor so arranged that the operation of any one device will open all ungrounded conductors.*

The following clause in the old rule, applying to the required circuit-breaker, is omitted:

and which shall be located as near as possible to the point where the service enters the building and so that the point from which it is opened or closed will be readily accessible.

The exceptions referred to in Rule a, quoted above, are given above in tabular form for comparison with the old requirements.

The following note has been inserted because it is anticipated that at an early date a new type of device will be perfected to take the place of an oil circuit-breaker:

At the time of the adoption of Paragraphs b and c preceding, other devices to serve in lieu of oil circuit-breakers were not available. Such devices, if developed and found suitable by the authority enforcing this code, may be employed in lieu of oil circuit-breakers and will satisfy the intent of this code.

The following rule, 5009-d, is new:

d. A lightning arrester complying with the requirements of section 1901 of article 19 of this Code shall be placed on each ungrounded overhead service conductor ahead of the other service equipment, when required by the authority enforcing this Code.

5009-e is the same as old Rule 5003-e.

The first sentence of 5009-f on circuit-breaker location and operation, was included in the old rule. The second sentence is new, as follows:

Provision shall be made so that the circuit-breaker is free to open in case the circuit is closed on an overload. This can be done by a trip-free breaker, by a multi-pole breaker having an operating handle per pole, or for an air circuit-breaker by a switch in series with each pole of the breaker.

5009-f, stating the requirements for circuit-breakers or switches and fuses in the secondaries follows the old rule with the new provision that control and protection on the secondary side may be omitted only when the secondaries supply but one set of mains.

The following in Rule 5009-h is a new requirement:

Air-break disconnectors required by this article shall be provided with means for grounding on the load side.

Except that such grounding means need not be provided where the service equipment is installed and maintained by the supply company.

Rule 5009-i is a repetition of Rule 401-b.

Section 5010. *Guarding Live Parts.*

This section is new and is as follows:

(a) All live parts, including conductors, which operate on circuits of more than 600 volts between conductors, shall be enclosed or isolated so as to be accessible to qualified persons only.

(b) Generator, switching, and motor rooms containing apparatus operated at more than 600 volts shall be securely locked except while a qualified operator is present.

Section 5011. *Outdoor Substations.*

This is a new section, consisting of the following single paragraph:

Where step-down transformers are located outdoors they shall be so placed as not to interfere with firemen, and not be accessible to unauthorized persons. Unless isolated by elevation, they shall be surrounded by a grounded metal fence, and placarded with a warning sign which indicates the highest voltage involved. Overflow oil shall drain away from adjacent buildings and combustible material.

Section 5012. *X-Ray and High-Frequency Apparatus.*

This is an entirely new section, occupying two and one-half pages. On account of the limited number of readers who are interested in installations of this character, the rules are not reproduced here.

Article 60. Signal Systems

Section 6001. *General.*

No change has been made in this section.

Section 6002. *Outside Wires.*

Rules 6002-a to f, inclusive, are the same as the corresponding old rules.

The first sentence in Rule 6002-g is worded differently from the old rule, but read in connection with the exception stated in 6002-i, the meaning is the same. A new sentence is added to this rule (referring to wires from the last outdoor support to the protector and wires attached to buildings).

Where such wires are entirely within a block the insulation on each wire may be less than 1/32 inch, but not less than 1/40 inch in thickness.

6002-h is the same as old Rule h, specifying the method of bringing signal wires into buildings.

6002-i, as follows, is new:

i. The preceding paragraphs g and h shall not apply where the fires enter a building in the form of a cable such as is described in paragraph f of this section, nor where the entire street circuit is run underground, and the circuit within

(Continued on Page 45)

Motor Distribution Evils Attacked

MOTOR specialists held several important meetings at the electragist convention in Chicago August 6-10, during which a plan was drawn up for discussion with representatives of leading motor manufacturers, with a statement of motor distribution policy designed to end some of the evils in this industry.

The plan, given in detail on this page, was thoroughly discussed by all motor specialists present at the convention and was then informally studied by the joint committee of motor specialists and motor manufacturers, representing the Association of Electragists and the N. E. M. A. Final action was deferred until the manufacturer representatives could take the plan before the entire group of motor manufacturers. Later additional meetings will be held by the joint committee until a final plan is worked out.

The report of the motor section committee to the general meeting of the A. E. I. stated that "the manufacturers now have a more definite and sympathetic understanding of the motor specialists' difficulties". The committee recommended that a sub-committee of five members be selected to meet with the committee on motor merchandising of the N. E. M. A. in the future. The following resolution was proposed and adopted by the general convention:

"In view of the success of various local motor section activities of the electragists, we recommend herewith that the A. E. I. support in all ways possible the formation of local motor sections in all important communities throughout the country, the establishment of such local motor section groups will bring to the national motor section greater prestige when dealing with motor problems in general. They should result not only in better cooperation between the motor specialists themselves as individuals, but also between the manufacturers' representatives and the motor specialists in their respective sections. It is suggested that field men and local secretaries, where formal local associations exist, use their best efforts to assist in the formation of local motor section groups."

E. O. Shreve, manager, industrial department, General Electric Company, addressed the convention on August 8, on the subject: "Some Thoughts on Motor Distribution", stating his belief that there was a real economic place in the distribution of motors for the motor dealers.

"The motor dealer," he said, "if he is to function properly, must be a strong, constructive, selling force and not simply an order taker, nor should he make his transactions stand on price and give away his legitimate profits. He should expect to sell on the basis of quality and service. On the other hand, I believe that the manufacturer has not been able to set up a policy which will insure proper protection for the motor dealer in the field which he economically should serve.

Proposed Motor Distribution Plan

1—WHAT IS A MOTOR SPECIALIST

A motor specialist is an individual firm or corporation who is regularly in the business of selling motors, repairing and installing the same, and who is properly equipped and qualified to service and install motor apparatus and accessories connected therewith.

2—MOTOR FRANCHISES

A motor specialist will operate under a single franchise. He may obtain a franchise from another manufacturer to cover apparatus not obtainable under original franchise.

3—POLICY OF MOTOR SPECIALISTS WITH FRANCHISE

Motor specialists holding a franchise are to make every effort to sell the product of the manufacturer with whom they hold the contract.

4—DISCOUNTS TO MOTOR SPECIALISTS AND ELECTRICAL CONTRACTOR-DEALERS

Discount of 10 percent be allowed to Contractor-Dealers not holding motor franchises.

Discount of 20 percent be allowed to Motor Specialists holding a motor franchise.

5—CLASSIFICATION OF EQUIPMENT

The motor franchise referred to above shall include alternating and direct current motors from 1 h. p. up to and including 200 h. p. each.

On fractional h. p. motors and those above 200 h. p. the following rules shall obtain:

a. On sales of motors above 200 h. p. each, the motor specialist holding a franchise shall have a differential of at least 5 percent.

b. On sales of motors above 200 h. p. each by Contractor-Dealers not holding franchises, they shall receive a differential of 2½ percent.

c. On fractional h. p. motors it is recommended that the discount be 25 percent to motor specialists holding a franchise and 15 percent to Contractor-Dealers not holding such a franchise.

6—SELLING POLICY

Motor specialists and Contractor-Dealers, manufacturers will sell to all customers at manufacturers' published price, except the following:

a. Manufacturers who buy motors in connection with their own apparatus for resale purposes.

b. Public Utilities (Electrical)—on the same terms and conditions as motor specialists holding franchises.

c. Federal Government.

Manufacturers will eliminate all future delivery contracts, syndicate order contracts, etc.

7—DIRECT SALES

Where motors are sold direct to the customer by the manufacturer, compensation of at least 5 percent shall be allocated to the motor specialist with a franchise who installs the wiring for this apparatus.

Code Analysis

(Continued from Page 44)

the block is so placed as to be free from chance of accidental contact with electric light or power wires of over 250 volts.

Section 6003. *In Buildings*: *Generally.*

Rules a, b and c in this section have not been changed.

Rule 6003-d requires that signal wires shall not be placed in a tube *or compartment* containing electric light or power wires, and continues with new material as follows:

nor in the same outlet box, junction box or similar fitting or compartment unless separated from said electric light and power wires by a suitable partition, except where the power wires are introduced solely for power supply to signaling equipment or for connection to remote control equipment.

The installation of bell-ringing transformers is clearly and completely covered by a new rule, 6003-e:

e. Transformers or other devices supplying current to signal systems from electric light or power circuits shall be of a type expressly approved for such service. The secondary wiring shall conform to the requirements of this article and the primary or the charging circuit wiring to the requirements of Articles 1 to 19, inclusive, of this Code. This transforming device shall be permitted only when the primary thereof is properly grounded as required in article 9 of this Code.

Section 6004. *In Buildings*: *Where the Distribution System Consists of Aerial Wires*:

Except for the following fine print note this section follows old Section 6004 without change.

The word "block" as used in these rules, means a square or portion of a city, town or village enclosed by streets and includes the alleys so enclosed but not any street.

Section 6005. *Grounding.*

There is no change in this section except that in Rule c, soldering the grounding conductor to a ground pipe is no longer approved.

The Electragist

Official Journal of the
Association of Electragists—International
S. B. WILLIAMS
Editor

Heretofore Unpublished Facts

The Association of Electragists has been accused, in what has been taken to be in a spirit of friendly criticism, of giving the impression that it is seeking a subsidy from other groups in the industry in order to "carry on", that there has been an undercurrent of feeling that the association was slipping and that the association might accomplish more if it spent less time scrapping with the central stations that insist in playing bad boy.

This will not be a denial of the allegations, nor an attempt to answer them. It is our purpose merely to state the facts so that those that have had the above impressions might be informed.

Where there is smoke, one expects to find fire. The Association did seek a subsidy from the manufacturers, the Association has been scrapping with unruly central stations, the Association is not as strong numerically as it has been or as it might be.

These are the surface facts below which are controlling facts that its friends must know now that the subject has been opened up.

There are more than 30,000 separate electrical contractors in the United States of whom approximately 2000 are members of the Association of Electragists. The A. E. I. is not set up to do a job for the thirty thousand but only for its members. Nevertheless, the A. E. I. has been extending its helpful influence outside its membership and because of the value of that work a number of influential men in the manufacturing branch of the industry stated that the A. E. I. should further engage in this non-member work and expressed their willingness to contribute to the expenses involved.

The A. E. I. accepted these expressions as promises and went ahead with the work. After spending considerable money and just getting nicely started the manufacturers were asked to make their subscriptions but none were made. The work was too expensive for the A. E. I. to carry on and it had to be abandoned, the full expense of which was borne by the Association.

Almost every help that the A. E. I. prepares for its members has been available to non-members. Its budget is small—much smaller than that of any other group and it has reached the point where it must devote its entire attention to helping its own members. The work of helping the thousands who belong to no organization is an industry job. Up to the present the A. E. I. has been carrying the burden alone.

The A. E. I. needs no subsidy, nor has it ever needed one to carry on its rightful work. If other work is required it will be paid for by those who desire it before it is undertaken.

The A. E. I. has been accused of wasting its time scrapping with the central stations when it might have been better employed in a more useful occupation.

It is doubtful if its critic has fully appreciated the results that have come and will come from that militant attitude. One of the direct outcomes was the Wiring Conference from which grew the Industry Sales Conference. Furthermore, there is a greater appreciation of the economics involved in trade relations than ever before.

Finally, the Association is not slipping because its membership is not growing in numerical strength. When the manufacturers declined to follow through in the support of the work above mentioned it was necessary for the A. E. I. to economize in every direction. Accordingly, all field efforts to get new members were abandoned until such time as this work could again be afforded. Without field efforts, fewer new members are secured. It costs all of the first year's dues and sometimes more to sell a membership and there is no assurance that the man will stick.

The financial report made in August to the Executive Committee for the first eight months of 1928 shows the A. E. I. to be in a better financial condition than in any previous time during the past five years.

During the first eight months of this year the Association has engaged in more constructive work than in any other similar period. Unfortunately the work is intangible and requires a broad understanding of fundamental values in order to appreciate its importance.

The status of the A. E. I. amongst industry leaders and in industry councils is now undisputed. Such was not the case a few years ago. Today the industry listens with respectful attention to A. E. I. suggestions. Is that a sign of slipping?

The Association of Electragists, like its people the contractors, has had to take a lot of criticism that seems justified from surface impressions. Those, however, who are interested in getting below the surface and finding out the real facts are confident that the A. E. I., handicapped as it is by the most meagre budget of any association, is headed in the right direction.

What the A. E. I. needs today is more of the understanding type of friends—men who will lend their efforts to building the membership to the point where it is more truly representative of the contracting industry.

Outlet Campaign Prices

There is only one price at which outlets can be sold to the public successfully and that is the price which permits the contractor to earn a profit. Most campaigns in the past have been conceived on the basis of price, some fair to the contractor but many at prices which permitted no profit and sometimes didn't even cover cost.

Does the manufacturer cut the price of wiring supplies to accommodate an outlet campaign?

Does the jobber offer his stock for less?

Does labor work for less on an outlet campaign?

Does the central station cut its rates?

Then why should the contractor be expected to cut his price?

The contractor will as a rule find that the installation of one or two convenience outlets is not very profitable even at much greater prices. Overhead, supervision, unproductive or waste labor sums up considerably on such jobs. These items should all be considered before making a price. Moreover, the contractor has to remember that if he does make a price for a campaign that it will be difficult to get a better price later because an advertised bargain price has a habit of sticking with the public.

We urge contractors before entering upon this class of work to study their costs and arrive at a fair price which carries with it a reasonable profit.

Talk to the Big Boss

In California and Iowa the contractors have been able to work out mutually satisfactory working arrangements with the local power companies. In both instances the results were accomplished by getting both sides together around a table and discussing the case plainly, frankly and fairly.

In other places the contractors have tried to get together with their power company people and have failed. The answer has undoubtedly been found by the Iowa and California boys. They refuse to talk to anybody but the "big boss".

The man who is directing the company's affairs has a wide outlook. He will listen, and if the contractors will present their case from the economic angle he will see it and act accordingly. Departmental executives, new business managers, etc., are too much wrapped up in their jobs to understand the value of good trade relations.

Too often new business managers feel that their success or failure is predicated not upon the growth in load but in the increase or decrease in volume of appliances sold by their department. Naturally, men so thinking would not be amenable to any suggestion which might curtail the sales volume of their particular department.

The president or general manager, however, is interested in load development, irrespective of where it originates. As a rule, he hears only the story of the new business manager. Let him know that the local policy is curtailing the sales of independent dealers and he will see that a change is brought about.

Successful utility managers are now beginning to realize that a large number of contented dealers are a company's best aid in building load.

The 1928 Convention

Another Electragist Convention has come and gone—Chicago, August 6-10. Like most previous conventions it was the best ever held.

At no other convention has the elaborateness of entertainment, or the smoothness with which the details were carried out been equalled. The success of the convention from that angle was due entirely to our Chicago friends who worked so hard and so enthusiastically.

The convention sessions undoubtedly marked a turning point in the relations of the Association of Electragists with the other national electrical associations.

No longer are the Electragists to be satisfied with the crumbs that fall from the rich man's table. The rest of the industry wants them present at the head table at the banquet.

The Association received at the convention the assurance, and it came from up above, not down the line, that other interests would take no action affecting or in any way touching the electrical contractor, without first discussing it with the association and trying to work out a mutually satisfactory course.

If the words there uttered are not mere gestures, but are borne out in deed by those who said them, then the 1928 Electragists' Convention will have been one of the most successful of all time.

Nor should this be difficult of accomplishment for the Electragists are not one-sided or selfish in their views. Their national organization has at all times tried to take a stand that in their opinion was good for the entire industry. Their differences of opinion with the National Electric Light Association have not been due to a belligerent disposition but to an insistence for conformity to fundamental economic laws. The Association knows beyond a question or doubt that its program is sound economically and is for the good of all.

The Association has repeatedly demonstrated the soundness of its position. Its latest demonstration was the paper presented at the convention by Professor Cabot, of Harvard. It is reprinted elsewhere in this issue. Professor Cabot, a student for years of utility management, a man stigmatized by the yellow press of the country as a kept man of the utilities, has stated clearly and concisely the proper economic principles which must be followed in any community to assure successful growth of electric service. In no essential do they differ from the program of the Association of Electragists.

The Association welcomes the opportunity to discuss mutual problems with other branches of the industry but it asks that the other conferees have equal authority with its own representatives. Fundamental problems can be discussed and action taken only by executives. Deliberations with minor officials are a waste of time.

Yes, it was a great convention!

Association of Electragists
INTERNATIONAL

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639 Mission Street, San Francisco, Cal.

SECRETARY AND TREASURER, Laurence W. Davis
15 West 37th Street, New York City

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CALIFORNIA		
Eureka	Fred Sundberg	2542 "C" St.
Fresno (C)	Clyde L. Smith	1162 Broadway
Glendale (C)	G. A. Fjelstrom	611 Keinlin Drive
Long Beach (C)	R. W. Abright	222 Brock Bldg.
Los Angeles (C)	Helen I. Mikesell	Chamber of Com. Bldg.
Oakland (C)	Laurence R. Chilcote	Hobart & Webster Sts.
Pasadena (C)	M. G. Barnes	1359 North Lake Ave.
Sacramento	L. W. Sherman	910 Ninth St.
Sacramento	W. E. Labare,	Pacific Tel. and Tel. Co.
San Francisco (C)	E. E. Browne	522 Call Building
Santa Ana (C)	O. N. Robertson	303 N. Main St.
Santa Barbara (C)	J. H. Gotchel	635 E. Haley St.
Tulare (C)	E. H. La Marsna	147 E. Kern St.
COLORADO		
Denver (C)	E. C. Headrick	89 Broadway
Pueblo (C)	E. F. Stone	So. Colorado Power Co.
CONNECTICUT		
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Hartford (C)	A. A. Angello	473 Park St.
Waterbury (C)	D. B. Neth	107 West Main St.
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Washington (C)	Leo Cleary	2119 Eye St., N. W.
FLORIDA		
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Deland (C)	C. W. Allcorn	132 No. Florida St.
Fort Myers (C)	P. K. Weatherly	Thompson-Weatherly Co.
Indian Riv. Dist. (C)	I. A. Paige	Vero Beach
Jacksonville (C)	W. H. Secrest	108 West Bay St.
Miami (C)	Daniel J. Abbott	3402 N. Miami Ave.
Orlando (C)	Solon M. Lantz	833 E. Concord
Palm Beach (C)	C. R. Carman	----------
St. Petersburg (C)	Gardiner Blackman	----------
Tampa (C)	P. F. Lyons	P. O. Box 992
GEORGIA		
Atlanta (C)	L. H Palmer	557 Marietta St.
Savannah (L)	Sylvan M. Byck	Byck Electric Co.
ILLINOIS		
Chicago:		
Electrical Contractors' Association	J. W. Collins	230 No. LaSalle St.
Master Elec. Contractors' Association	F. J. Boyle	304 S. Halsted So.
Decatur (C)	Earl Weatherford	114 East William St.
Granite City (C)	Paul S. Pender	1916 Edison Ave.
Peoria (C)	L. B. Van Nuys	238 So. Jefferson Ave.
Rockford (C)	Donald Johnson	106 North Second St.
Springfield (C)	A. D. Birnbaum	916 West Cook St.
Wheaton (C)	E. C. Krage	133 West Front St.
INDIANA		3461 Michigan Ave.,
Lake County (C)	A. R. Irwin	Indiana Harbor
Indianapolis (L)	A. W. Kruge	2405 E. Tenth St.
Michigan City (C)	Walter A. Sassodeck	913 Franklin St.
Muncie (C)	Harry McCullough	113 W. Howard St.
South Bend (C)	R. A. Frink	1338 Howard St.
IOWA		
Cedar Rapids (C)	James Cusack	94 First Ave., West
Davenport (C)	Louis F. Cory	510 Brady St.
Davenport (L)	H. Heysinger	Davenport Cont. Co.
Des Moines (C)	Floyd J. Moeckly	308 S & L Bldg.
Fort Dodge (C)	J. A. Paul	16 So. Twelfth St.
Sioux City (C)	E. A. Arzt	211 Fifth St.
Waterloo (C)	R. A. Cole	Cole Bros. Elec. Co.
KANSAS		
Salina (C)	C. G. Loomis	814 Cedar St.
Wichita (C)	P. W. Agrelius	Wichita
Wichita (C)	Oscar De Bruce	118 E. Second St.
KENTUCKY		
Lexington (C)	J. H. Brock	235 East Main St.
Louisville (C)	F. Sherman Voght	Kenyon Bldg.
Paducah (L)	K. H. Knapp	c|o Paducah Electric Co.
LOUISIANA		
New Orleans (C)	I. G. Marks	626½ Carondelet St.
MARYLAND		
Baltimore (C)	A. P. Peterson	515 Cathedral St.
Baltimore	W. D. Young	Calvert & Franklin Sts.
MASSACHUSETTS		
Boston (L)	Edward G. Jay	158 Summer St.
Boston (C)	Charles A. Rounds	----------
Cambridge (C)	John L. Winn, Jr.	550 Massachusetts Ave.
Lowell (C)	George A. Ryan	79 Middle St.
Haverhill (C)	H. W. Porter	14 West St.
Malden (Medford, Everett and Melrose) (C)	H. J. Walton	c|o Malden Electric Co.
Springfield (C)	C. S. Foster	220 Dwight St.
Worcester (L)	E. B. Coghlin	280 Main St.
MICHIGAN		
Detroit (C)	N. J. Biddle	112 Madison Ave.
Grand Rapids (C)	T. J. Haven	1118 Wealthy St., S. E.
Kalamazoo	E. R. Hummel	1121 Seminary St.
Muskegon (C)	Wm. Steiner	1138 3rd Street
Saginaw (C)	E. T. Eastman	209 Brewers Arcade
MINNESOTA		
Duluth (L)	Morris Braden	c|o Minn. Pow'r & Lt. Co.
Minneapolis (C)	W. I. Gray	209 Globe Building
MISSOURI		
Kansas City (C)	Walter C. DeBold	City Bank Bldg.
St. Louis:		
Electragists' Ass'n (C)	Carl H. Christine	1042 Telephone Bldg.
Electric Employers' Association (C)	A. W. Van Nort	Railway Exchange Bldg.
NEBRASKA		
Lincoln	J. E. Shuff	1400 "O" St.
Omaha (C)	E. H. Brown	1818½ Harney Street
NEW JERSEY		
Jersey City (C)	John Nairn	38 Oakland Ave
Long Branch (C) (Asbury Park and Red Bank)	Austin Hurley	Campbell Ave., Long Branch
Paterson (C)	H. L. Jaycox	188 Ellison St.
Philipsburg (See Lehigh Valley, Pa.)		
Prospect Park (C)	Leonard De Block	Hopper St.
Union City (C)	Frank Zeller	328 48th Street
NEW YORK		
Buffalo (L)	Samuel S. Vineberg	307 Electric Bldg.
Jamestown (C)	Henry M. Lund	309 Main Street
Nassau-Suffolk (C)	Henry T. Hobby	55 Front Street, Rockville Centre, L. I.
New York City:		
Section No. 1 (C)	Walter Knapp	207 East 43rd Street
Independent (C)	John J. Bauer	157 E. 51st St.
Metropolitan (C)	George W. Neil	96 Beekman St.
Niagara Falls (C)	E. M. King	515 Niagara Street
Rochester (C)	G. Fred Laube	Laube Electric Co.
Rochester (L)	Henry F. Burton	89 East Ave.
Schenectady (C)	Richard Spengler	421 McClellan Street
Syracuse (C)	Fred P. Edinger	802 East Water St.
Utica (C)	W. C. Ballda	228 Genesee Street
Westchester Co. (C)	Jack Lalley	14 Mnr. Hse. Sq., Yonkers
Yonkers (C)	Louis Mayer	485 South Broadway
OHIO		
Akron (C)	E. C. Rishel	540 East Avenue
Canton (C)	H. S. Hastings	301 New Vickery Bldg.
Cincinnati (C)	J. F. Riehle	1642 Cedar Ave.
Cleveland (C)	F. T. Manahan	Chester Twelfth Bldg.
Columbus (L)	O. A. Robins	1242 Oak Street
Dayton (C)	Clarence Carey	1107 South Brown St.
Lorain (C)	A. B. Walton	3150 E. Erie Ave.
Toledo (C)	Fred C. Dunn	Builders' Exchange
Northern Ohio (C)	R. A. Wentz	Elyria
Youngstown (C)	L. M. Robinson	Mahoning Bank Bldg.
OKLAHOMA		
Pawhuska	C. G. Sego	Pawhuska
OREGON		
Portland (C)	J. R. Tomlinson	51 Union Ave., N.
Portland (C)	C. K. Mowrey	120 Grand Ave.
PENNSYLVANIA		
Altoona (C)	Walter Bracken	Leechburg
Allegheny Valley	E. G. Jackson	12 West Third Street
Allentown (C)	E. W. Weaver	805 Chew St.
Easton (L)	H. Clark Kreider	Arcade Bldg., Center Sq.
Erie (C)	R. D. Goff	11th and French Sts.
Philadelphia (C)	M. G. Sellers	1202 Locust Street
Pittsburgh (C)	D. A. Fleming	518 Empire Bldg.
Wilkes-Barre (L)	Leon N. Sell	Town Hall
RHODE ISLAND		
Providence (C)	H. E. Batman	36 Exchange Place
SOUTH CAROLINA		
Charleston (L)	J. P. Connolly	141 Meeting Street
SOUTH DAKOTA		
Sioux Falls	H. W. Claus	326 S. Phillips Ave.
TENNESSEE		
Chattanooga (L)	P. W. Curtis	725 Walnut Street
Knoxville (L)	Jerry G. Cason	303 West Church St.
Memphis (L)	J. J. Brennan	179 Madison Ave.
Nashville (C)	J. T. Shannon	c|o Electric Equip. Co.
Nashville (L)	F. H. Tathwell	Nashville Ry. & Lt. Co.
TEXAS		
Beaumont (C)	J. A. Solleder	Houston & Bolivar Sts.
Dallas (C)	P. B. Seastrunk	2032 Commerce St.
Houston (C)	J. A. Kibbler	----------
UTAH		
Ogden	B. Kristofferson	2249 Washington Ave.
Salt Lake City (C)	R. E. Folland	Newhouse Hotel
VIRGINIA		
Norfolk (L)	A. W. Cornick	200 Plum St.
Richmond (C)	E. M. Andrews	15 N. Twelfth Street
WASHINGTON		
Seattle (L)	P. L. Hoadley	Seaboard Building
Spokane (C)	William Stack	W. 1121 Cleveland St.
WEST VIRGINIA		
Wheeling	Peter J. Erb	1414 Eoff Street
WISCONSIN		
Green Bay (C)	V. E. Grebel	531 S. Broadway
Madison (C)	Carl J. Marsh	710 Beaver Bldg.
Milwaukee (C)	E. H. Herzberg	1604 Wells St.
Milwaukee (L)	J. S. Bartlett	443 Commerce Bldg.
Racine (C)	Joseph J. Small	1910 Linden Ave.
CANADA		
Montreal (C)	George C. L. Brassart	674 Girouard Ave.
Vancouver (C)	J. C. Reston	579 Howe St.
Vancouver	J. Galloway	744 Hastings St. W.
Winnipeg (C)	Fred Ball	300 Princess St.
Winnipeg	D. O'Toole	Northern Elec. Co.

(C) designates exclusively Contractor-Dealer organization.
(L) designates an Electrical League.

AUGUST ACTIVITIES

Swampscott, Massachusetts Chosen for Next Convention

Association of Electragists Will Meet Near Boston During Week of September 30, 1929

THE New Ocean House at Swampscott, Massachusetts, twelve miles from Boston on the "north shore", has been chosen by the executive committee of the Association of Electragists, International, for the twenty-ninth annual convention, during the week of September 30, 1929.

In announcing this selection by the executive committee, General Manager Davis said: "This is the first time for twenty-three years that the convention has gone to New England and will be welcomed alike by New England electragists as our hosts and by electragists from all other parts of the country because of the many historic and picturesque places of interest throughout that birthplace of America. The committee have selected one of the most delightful resort hotels on the New England coast and we will have practically exclusive occupancy of The New Ocean House for the convention week at Swampscott. The manufacturers' exhibition, which has been held with the electragists' convention for several years will be omitted next year."

"New England weather is at its best around the first of October and with the beautiful shore drives to Salem, Marblehead and Gloucester, or inland to Lexington and Concord, and the many interesting historical features of Boston, Cambridge and other towns within a short distance from Swampscott, many delegates will want to extend their visit beyond the convention days."

Swampscott is the picturesque New England coast town where President Coolidge had his summer capital in 1925.

The New Ocean House is located directly on the waterfront, with its own private sandy beach between great rocky promontories. Bath houses, golf

New Ocean House

course, tennis courts, etc., will be available to the electragist delegates.

The great Lynn works of the General Electric Company are only ten minutes drive from the hotel and will be open to the convention visitors.

The 1928 Code Approved

The executive committee of the National Fire Protection Association has approved the report of the electrical committee and directed that the 1928 Code be certified to the National Board of Fire Underwriters for printing and to the American Engineering Standards Committee for approval as an American standard. Deliveries will not begin until after September 1.

Red Seal Contest

The Electrical League of Milwaukee is conducting a contest to stimulate Red Seal work. It offers a prize of $20 to the contractor who secures the most Red Seal applications before September 1. The second prize is $10 and the third $5. All jobs to be counted in the contest must be inspected by the league office. Applications will be counted on any single dwelling, duplex or apartment, but application for multiple dwelling shall count only as one.

League Conference Studies Wiring Development

Representatives at Camp Cooperation VIII Hear Reports on Plans of Industry Sales Conference

WITH a total of 239 persons in attendance, representing seven national business associations and forty-nine local electrical leagues throughout the United States and Canada, Camp Cooperation VIII, held at Association Island under the auspices of the League Council and sponsored by The Society for Electrical Development, opened on August 2 and closed on August 7.

Pointing to the importance of permanency in any selling program, as against sporadic and short-lived efforts, W. E. Sprackling, in discussing the work of the Electrical Industry Sales Conference since its inception a year ago, averred that the electrical industry has had too many campaigns that were mere flashes in the pan and these often so widely separated by distance, that the force of the S. E. D. and league structure had never been given the chance to display its full merchandising worth to the entire industry. In like vein spoke C. L. Collens at the opening of the camp, when he bespoke the need for as much patience as zeal in the cooperative work now and presently before the industry.

Time and again this point received special emphasis by visiting speakers and by members of the league council who encouraged the conferees to mark time rather than risk the mistake of marching in the wrong direction. Over and above this need for ample preparation, it was made clear that in any such plan as contemplated by the sales conference to develop the market for adequate wiring, or in a localized national operation, such as is concurrently carried out under the copyrighted

Red Seal emblem, the local league may be said to be the keystone.

Touching more or less directly on the work of the Industry Sales Conference was an address by Paul T. Cherington, Research Director of the J. Walter Thompson Company, which has been engaged by the conference to undertake a survey of the wiring situation locally and nationally with a view to drawing up the proposed advertising and marketing program behind which all groups of the industry may align themselves. Mr. Cherington traced the trend of an everchanging market and pointed out that the present one is rather a buyers' market than a sellers' one.

W. H. Hodge, also dealing with inter-trade cooperation, discussed at some length a matter which is finding wider and wider support on the concurrent programs of local leagues—the home modernization movement. Mr. Hodge admonished the leagues in general to hitch their activities to such cooperative developments as this rather than to intermittent and segregated campaigns designed only to please this or that faction, but of no particular worth in the long pull to the general community of interest in which all share.

R. Bourke Corcoran was chosen to succeed J. E. North as chairman of the League Council, D. C. Birdsell as vice-chairman to succeed E. Whitehorne and O. C. Small to succeed G. E. Jaquet as secretary.

Underfloor Duct Patents

A recent decision by the U. S. Circuit Court of Appeals declares the original underfloor duct patents of Alexander, not infringed by the underfloor systems made by other companies.

N. Y. Safety Campaign

Under the auspices of the Building Trades Employers' Association of New York City, a campaign to reduce construction accidents in all branches of the building industry has been started. At the present time the work is being done primarily through education of general contractors and architects; later it will be extended to separate trades through subcontractors and foremen.

The first step in the safety campaign was the establishment of a method of keeping accident records so that comparisons could be made with previous months and with other contractors, and so that the most frequent sources of accident could be learned and given special study.

The second step was the preparation by a safety committee of safety specifications which architects can include in building contracts, providing for definite rules covering such subjects as: First aid equipment, ladders and temporary stairs, elevators carrying workmen, floor openings, material hoist shaftways, concrete bucket shafts, swinging scaffolds, suspended scaffolds, planking derrick floor, sidewalk and overhead protection, and artificial lighting.

The clause on artificial lighting reads as follows:

Art. 13. Artificial Lighting.—Install and maintain lighting for the under side of the protection over sidewalk; also for temporary illumination of the building. Suitable feeder lines should be installed extending from the bottom to the top of the building, and of ample capacity to properly provide for all spaces requiring light, and at the same time, service for all motors contemplated to be used. Install and maintain one light at each floor landing in fire tower and stairways and at such other places as may be necessary to properly light the stairway; also, in exits to streets, and on all elevator cars used for carrying passengers.

Standards Committee

The American Engineering Standards Committee is being reconstructed to enable trade associations interested in standardization to join in the direction of the movement. The new organization, under the name of the American Standards Association, has been approved by the main committee and is now being voted on by the member-bodies.

An Open Letter

Certain newspapers early in August came out with head lines which might cause the casual reader to believe that the Electragists at their annual convention last month had assailed the power companies as the result of reports from the Federal Trade Commission public utility investigation.

The facts are as follows:

A man by the name of A. B. Walton claiming to represent the Association of Certified Electricians of Lorain, Ohio, addressed a letter to the A. E. I. Executive Committee assailing the power companies and requesting that the A. E. I. cooperate with his organization in its Washington activities. This letter was received by the Executive Committee but did not reach the convention floor. A copy of this letter was given to the press presumably by Mr. Walton, and it was published.

Mr. Walton has no connection with the Association of Electragists either as a member or a representative nor has the organization which he professes to represent.

It is not difficult with the aid of a sensational press to embarrass an association by writing it a letter and then sending it to the newspapers. The embarrassed party has no other recourse than to make a public denial of any part in the matter. This we now do.

The Association of Electragists is not supporting either morally or financially nor is it in sympathy with the activities of Mr. Walton.

At any time that the Electragists of this country need a voice at Washington or elsewhere for any purpose whatsoever that voice will come from the Association of Electragists. We do not delegate the right to speak for us to any one not a staff man or a member officially designated as our representative.

Furthermore, we are not in sympathy with those elements who would pervert the proceedings of a fact finding commission to pillory the power industry before a fair judgment has been reached at the conclusion of the full investigation.

CLYDE L. CHAMBLIN,
President, A. E. I.

Local Secretaries Discuss Association Problems

Problems of local contractors' associations were discussed by a number of local secretaries who attended the Round Table in Chicago August 4, prior to the A. E. I. convention. The subject of credit was considered, with information contributed by J. E. Vaughan, Jr., of the National Association of Credit Men; N. J. Biddle, of Detroit, who explained the Detroit Plan; and others.

On the subject of accounting, E. H. Herzberg, of Milwaukee, outlined the method of installing standard accounting systems in contractors' shops. Those who maintain the system for a year receive from cooperating jobbers a rebate of 1 per cent of their purchases until the cost of the system is returned.

Floyd J. Moeckly of Des Moines, explained the program proposed by Des Moines contractors to jobbers, including a request to discontinue retailing to the public at wholesale prices, the discouragement of buying of materials by contractors in little dribs, and collection of amounts due rather than the acceptance of owner's guarantee for payment of materials on jobs.

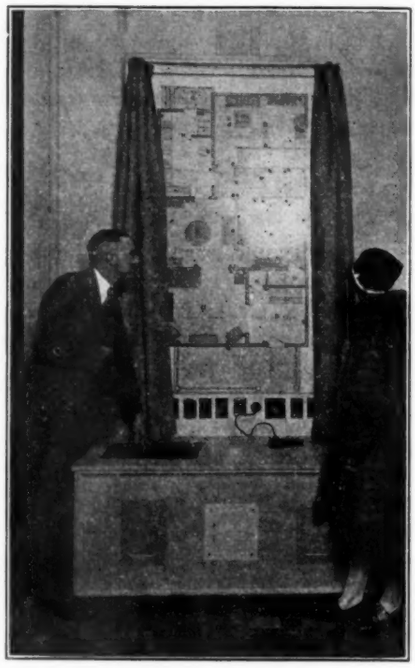
During the discussion it developed that 75 per cent of the jobbers' cost of salesmen was due to the practice of jobbers' salesmen calling on industrials and that but 20 percent of this expense is properly chargeable to electrical contractors and dealers. The present chaotic condition of the distribution system was attributed to the over capacity of manufacturing plants and a declining market.

The importance of protecting the jobber channels was emphasized, particularly to protect the credit situation.

New Standardization Projects

The initiation of four new standardization projects for mechanical equipment under the auspices of the American Engineering Standards Committee has been requested by the American Society for Mechanical Engineers. One of these projects is the standardization of rolled threads for screw shells of electric sockets and lamp bases. The purpose of this project is the development of thread standards for the new intermediate size lamp socket and base and the review and revision of present manufacturing practise for the older types.

Red Seal Display



This display board, used by the Detroit League, is designed to demonstrate the room-by-room application of the Red Seal plan. It is set with small electric lamps which may be operated by the attendant while giving the Red Seal talk.

Illuminating Society Meets

The Illuminating Engineering Society will hold its annual Convention in Toronto, Canada, during September 17 to 20. Sessions will be held on natural lighting, parallel lighting practice, lighting service, and European lighting.

Municipal Electricians Convene

The International Association of Municipal Electricians will hold its convention in New Orleans from October 23 to 26. This is the thirty-third annual convention.

First Electrical Trade Show Planned

An electrical trade show, the first of its kind, will be held in New York on October 17, 18 and 19. The trade show is an expansion on a national basis of the annual electrical show, with the first three days set apart exclusively for the trade, and the final seven days of the show open to the general public.

It is expected that many manufacturers will use the trade show as the occasion for announcing new products and new designs.

To Publish Electrical Manual

The National Fire Protection Association announces that they will shortly issue "Electrical Field Practise", a manual of particular interest to electrical inspectors. The manual will serve in interpreting and illustrating the meaning of the rules in the National Electrical Code. It is being prepared by a committee under the direction of Victor H. Tousley, inspector in Chicago for many years and the author of several books on electrical subjects.

Preventable Wastes

(Continued from Page 25)

see to it that all productive labor is busy at the time the work should start, and that they work up to the time the day closes. That cannot be done unless someone thinks about scheduling their time.

If, on small work, it is necessary to keep a wireman on the job, waiting two or three or four hours for an inspector to come to inspect the job, more money is wasted. If it is a small job the time lost by that wireman represents a large proportion of the profit on the job. It is possible to arrange for inspection at a certain, definite time, and then no time is lost in waiting around for the inspector to come.

There is a growing tendency on the part of general contractors, builders and owners, to do their own electrical work, because the people they employ are working efficiently. You are going to be able to compete only insofar as you work efficiently.

The difference in the bid prices on jobs doesn't always mean that the successful bidder has cut the price on the job. It sometimes, and frequently means that he is a better operator. Some men can take jobs 10 percent below the average of the other bidders, and make money, simply because they know how to administer their jobs.

We will save profit, we will get work for ourselves, if we will so administer the most expensive thing that we have to handle—human labor.

New Electric Range Receptacle

Two manufacturers are now making a heavy duty wall receptacle and plug suitable for connecting electric ranges, according to an announcement by H. J. Mauger, chairman, technical committee, range section, National Electrical Manufacturers' Association.

This committee urgently recommended that wiring device manufacturers make such a receptacle, in order to make range installations simpler and more convenient. According to the announcement of Mr. Mauger, it is the intention to induce owners to have their kitchens wired for an electric range when the house is built, whether they have a range or not. Later it will be a simple matter to install a range by simply plugging in.

New California Apprentice Agreement

A new apprentice agreement has been formulated by the Industrial Association of San Francisco for the electrical craft of that section, for the purpose of establishing a definite and uniform procedure covering the rates of pay of apprentices, bonuses, school standards, and workmanship qualifications.

Under the terms the rates of pay per day and schedule of advancement for apprentices in good standing are as follows: Starting wage, $2.00; after six months, $2.50; one year, $3.00; 1½ years, $3.50; two years, $4.00; 2½ years, $4.50; junior mechanic, $6.00; after six months, $7.00; one year, $9.00.

Transformer Construction

"Transformer Construction and Operation" by Emerson G. Reed (McGraw-Hill Book Co., New York).

To the man who is interested in transformers as a subject but who does not want to wade through a lot of mathematical gymnastics this book should appeal. It is not, however, what you might call a practical book; it is more of a book which a practical man, seeking education, might study to broaden himself. The volume grew out of a course of lessons prepared for the men of the educational department of the Westinghouse Company.

National Red Seal Specifications

Tentative Specifications Studied at Camp Cooperation VIII

FOR several months the Society for Electrical Development has been working out national Red Seal specifications which can be applied all over the country so that houses in cities not operating under S. E. D. licenses can be awarded Red Seals if the wiring comes up to minimum standards. The tentative national specifications below were studied by those present at Camp Cooperation VIII and were referred back to the Red Seal advisory committee of the S. E. D. for final adjustment.

The tentative specifications follow:

Minimum Wiring Specifications for Award of Red Seal

Location	Ceiling Light Outlets	Wall Light Outlets	Switch Outlets	Duplex Convenience Outlets
Porches, over 80 sq. ft.	1	or 1	1	
Entrances, front or rear	1	or 1	1	
Vestibule	1	or 1	1	
Lower Hall	1	or 1	2*	1
Passage Hall	1	or 1	1*	
Living Room	1	or 4	1*	3
Dining Room	1		1*	1
Kitchen	1		1*	1
Breakfast Nook	1	or 1		1
Upper Hall	1	or 1	2*	
Bath Room		2	1	
Bedroom No. 1	1	or 2	1	2
Bedroom No. 2	1	or 2	1	2
Bedroom No. 3	1	or 2	1	2
Bedroom No. 4	1	or 2	1	2
Closets, over 3 ft. deep	1	or 1		
Attic	1	or 1	1	
Cellar or Basement	1		1	1
Laundry	1			1-(not dup.)
Garage	1		1	1
Reception Hall or Foyer	1	or 2	1*	1
Library, Den or Music Room	1	or 2	1*	2
Sun Room	1	or 2	1	2
Breakfast Room	1	or 2	1	1
Kitchenette	1	or 1	1	1
Pantry	1	or 1		1
Sleeping Porch	1	or 1	1	1
Servant's Bedroom	1	or 1	1	1
Servant's Bathroom	1	or 1		
Lavatory	1	or 1		
Recreation Room	1	or 2	1	1
Each enclosed space in cellar or basement	1	or 1		

*Lighting control.

In rooms or halls having main entrances more than twelve (12) feet apart, at least one light outlet shall be controlled from each entrance. Lights which illuminate the foot and head of stairs shall be controlled separately from both floors. Switches should be placed on knob side of doorway.

Convenience Outlets: Make certain that before outlets are permanently located that they are not behind radiators or the swing of doors. When two or three are required in a room, they should be located on different sides of the room and most conveniently with respect to furniture spaces.

Spare Circuits: Attention should be given to the number of circuits in order that at a future date too many lights or too many appliances may not be placed on one circuit. Therefore in single dwellings provision shall be made for the addition of at least one (1) future circuit for the first seven (7) or less active circuits installed, and for the addition of two (2) future circuits for eight (8) to twelve (12) active circuits installed. Such provision to be made by a spare fuse terminal in the distribution panel or cabinet.

Main Service: To provide for present and future needs, a service of suitable capacity should be installed, but due to technical considerations the actual size of the service must be determined locally.

Certification: In addition to meeting the requirements of the Red Seal specifications, every Red Seal installation must be made in accordance with the

rules of the National Electrical Code, the electric light and power company, and local ordinances, and must be inspected and approved by the inspection department having jurisdiction.

Before the permanent Red Seal Emblem and Certificate will be issued, opportunity must be given for inspection of finished installation by a duly authorized representative of the local operating organization, or The Society for Electrical Development, Inc.

Inspectors to Convene

The International Association of Electrical Inspectors will hold its convention in Denver on September 10th to 12th.

Aerial Beacon for Chicago

The first beacon combining revolving searchlights and neon tubes has been installed on the Roanoke Tower, LaSalle and Madison Streets, Chicago. The 45-foot hexagonal steel tower gives the beacon a total elevation of 520 feet from the sidewalk, and it is expected that on clear nights it will be visible for 100 miles. At the top are two General Electric 24-inch, 8,000,000 candlepower revolving beacons, and below these are 24 vertical neon tubes.

The searchlights are equipped with automatic lamp-changing devices so that no failure in service results when the life of an incandescent lamp has been passed. The neon lights are flashed in code letters to guide aviators. One of the searchlights will be used later to indicate the location of the proposed landing field in Grant Park.

Mississippi League Meets

The Mississippi Electric League convention was held at Biloxi on July 9 and 10. The contractor-dealers session was addressed by J. M. Fried, electragist, Vicksburg; J. R. Wilcox, field representative, A. E. I.; J. G. Fisher, Mississippi State Rating Bureau; A. C. Mayer, General Electric Company; and E. L. Chesney, Commercial Credit Company.

Meter Code Published

The National Electric Light Association has published "Code for Electricity Meters," a small, clearly printed volume for ready reference. It contains nine sections, including such topics as definitions, specifications for acceptance of types of electricity meters, installation methods and laboratory and service tests.

Neon Beacon Chain Planned

The Richfield Oil Company has entered into a contract with the Electrical Products Corporation to establish a string of neon beacons from Los Angeles to the Canadian border.

It is planned to establish tourist centers in conjunction with the neon beacons. The lights will be 125 feet high and placed about 50 miles apart along the coast. At the base of each beacon, a service station, a one-story hotel, and garage will be built. They will be run as a chain.

OBITUARY

Allen M. Schoen

Allen M. Schoen, chief engineer, Southeastern Underwriters' Association, Atlanta, Ga., one of the best known electrical inspectors in the east, died August 15, 1928. Mr. Schoen was very active in national association work, being president of the National Fire Protection Association at the time of his death. He served as vice president of the N. F. P. A. from 1924-1928 and was on the executive committee from 1915-1918 and from 1922-1928.

C. R. George

C. R. George, city electrician of Houston, Texas, for 30 years, died at his home on August 5. After serving with the Southwestern Bell Telephone Company, he was appointed city electrician when that office was created in 1898. He made many improvements in traffic lighting systems, telegraph alarm systems and other municipal apparatus. He was secretary of the International Association of Municipal Electricians for 15 years.

Contractor-Dealer Notes

Amos H. Davenport has established an electrical contracting business and motor repair shop at 420 N. Geneva St., Ithaca, N. Y.

The Rudolph Electric Co. is now doing electrical contracting at 89 Broadway, Chelsea, Mass. It specializes in industrial work.

William D. Lukens, South Langhorne, Pa., has resigned from the firm of Lukens & Simons and will engage in the contracting business on his own account.

I. P. Hindall has opened an electrical contracting business in McComb, Ohio.

New Electragists

The following contractor-dealers have made application and been accepted into the A. E. I. since the publication of the last list in the August issue:

ALABAMA

Demopolis:
Lamar Elec. & Auto Co.

Selma:
Donovan Elec. Co.

CALIFORNIA

Arcata:
Arcata Elec. Shop

Carmel:
Carl S. Rohr

Fortuna:
Fortuna Elec. Shop

Glendale:
C. M. Ogden Elec. Co.

Santa Barbara:
Flynn-Peterson Elec. Co.

Santa Cruz:
Carroll & Searle Co.

ILLINOIS

Chicago:
S. M. Kahn

INDIANA

Richmond:
Wiley Elec. Co.

MICHIGAN

Grand Rapids:
Enterprise Elec. Co.
T. J. Haven Elec. Co.
Lewis Elec. Co.

MISSOURI

St. Louis:
National Elec. Service Co.

OREGON

Mount Joy:
Richard M. Zook

TENNESSEE

Memphis:
Liberty Elec. & Mfg. Co.

Chattanooga:
Chattanooga Elec. Co.

WISCONSIN

Milwaukee:
Phil Duffy
Holt Elec. Mfg. Co.

North Milwaukee:
Krout Elec. Co.

West Allis:
Hugo Peter

HAZARD

We Asked the Architects and Engineers About 30% Wire

and they said:

"With you 100% for better wire."

"I am a great believer in the use of a compound containing 30-33% para rubber —"

"In favor of better grades. Endorse your campaign very highly."

"Believe 30% wire should be used."

"Have been waiting for years for such a promotion campaign as yours and am thoroughly in favor of it."

"Believe in a high class wire. Would appreciate your book."

"We agree with you on 30% wire and that is all we ever specify. Please send copy of book."

"Heartily in favor of 30% wire."

"Always specify 30%. The best is none too good."

"There seems to be good reason for the use of 30% rubber insulation."

"Piping and wiring are the most important parts of the building and should be the best possible manufacture."

"Specify 30% wire always."

And This Means That They *Do* Want Better Grade Wire!

HAZARD INSULATED WIRE WORKS

Division of the Okonite Company

WORKS: WILKES-BARRE, PA.

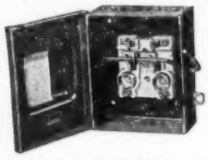
SALES OFFICES:

New York	Chicago	Philadelphia	Pittsburgh	St. Louis	Boston
Atlanta	Birmingham	Seattle	San Francisco	Los Angeles	Dallas

News of the Manufacturers

Automatic Starters

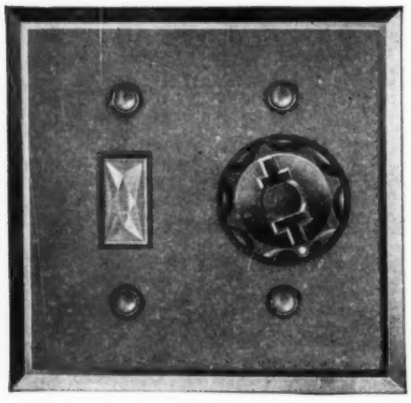
A new series of A.C. automatic starters has been recently announced by the Industrial Controller Co., Milwaukee. The starters are designed to provide low voltage and either



magnetic or thermal overload protection. It has quickly detachable contact fingers of a new type, floating armature, and a new form of interlock to permit replacement of contacts. It is furnished with or without push button in cover or with a three point switch in cover.

Switch-Outlet

Harvey Hubbell, Inc., Bridgeport, Conn., announces a combination switch-tap and pilot light in a duplex plate. It combines in one



unit a switch, an outlet, independent of the switch, and a warning light when the current is on, especially useful when the switch is used for remote control. A two gang box is used for the device.

Wire Connectors

The Ideal Commutator Dresser Co. now makes one size wire connector, designed to take care of all common wire sizes to take the place of three or four sizes previously made. The company also announces a price reduction. For large wires, an extra size connector is made to take all combinations of wires from 4 No. 14 to 3 No. 10.

Manual Starter

A new manual across the line motor starter is announced by the Cutler Hammer Mfg. Co., Milwaukee, Wis., with overload cutouts; cadmium plated, double break, roller contacts; and small size dust proof enclosing case. The roller contacts show a new trend in motor control design, being of the double break type which break the arc in two places. The contact rollers turn after each operation to present a new contact surface for the next operation. Thermal overload cutouts provide a time interval to take care of starting inrushes without shutting down the motor. The cover is in two parts; the lower section can be opened separately for replacing fusible links in the cutouts.

Emergency Light

A small self contained generating unit for emergency use is announced by Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa. This unit has a capacity of 2 k. w. and is fully automatic in starting and stopping. It is driven by a one cylinder air cooled gasoline engine, and is designed for use in theatres, schools, etc., for emergency lights when the other current suddenly fails.

Fixture Aligner

A new ball fixture aligner is being manufactured by the Benjamin Electric Mfg. Co., Chicago, designed for industrial locations where the lighting fixtures are suspended di-

rectly from the outlet box. The aligner permits the fixture to hang plumb even where the slope is as great as 45 deg. and the ball and socket design protects the fixture against jars and shocks.

Porcelain Brackets

The Pass & Seymour Company, Syracuse, is making a porcelain bracket designed for easy installation. A deep recess in the back makes it possible to install it both over boxes that are set flush with the surface of the wall

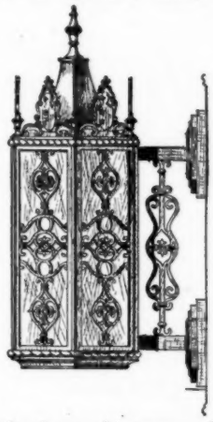
as well as over a stud box set close on the surface. It is furnished in the pull chain or keyless type with or without the convenience outlet. It may be had with a porcelain ring for exposed lamps (illustrated) or with a shade holder for glassware.

Wiremold

The Wiremold Co., Hartford, announces the addition of a new "Master" size Wiremold which is designed for heavy duty industrial and commercial wiring circuits. Another addition to the line is Wiremold with a screw-on base and a slip-on capping for running a circuit around a beam.

Lantern

The Murlin Mfg. Co., Philadelphia, has designed the new lantern in the English Renaissance style as shown in the illustration. The lantern is especially designed to har-



monize with the architecture of homes or apartments in the Old English style. It is made in two sizes, 9 in. by 22 in. and 6¾ in. by 16½ in., allowing use for both main and side entrances. The lantern is hexagonal in shape and has a hinged glass door in the bottom.

Electric Range

Benjamin Electric Manufacturing Co., 120 So. Sangamon St., Chicago, has released a booklet illustrating a new style of electric range, developed especially for small homes and apartments. The feature of the new model is the large cooking top and oven capacity in relation to the small amount of floor space required. Three finishes are available in combinations of white porcelain, french gray, and black japan.

Tension Indicator

General Electric Co. has developed a device for use in the repair of industrial haulage motor armatures, which indicates the exact strain in pounds that is applied to the steel binding wire by the binding machine or lathe, and provides a simple means of keeping track of this tension throughout the full operation of binding up the armature. It is designed to prevent stressing the binding wire beyond the elastic limit or tensile strength of the steel.

Weatherproof Socket

The Rodale Mfg. Co., New York City, is

making a socket of molded composition, said to be entirely weatherproof.